Homecoming '86: Expanded

Slate of Activities Awaits Visitors

An expanded, "better than ever" homecoming agenda awaits the thousands of OSU alumni and friends expected to visit the campus November 8, according to Don Wirth, alumni association director.

In addition to the traditional bonfire, alumni barbecue and homecoming game, new activities added this year include open houses in the Schools of Pharmacy and Home Economics, tours of the campus, and mini-class reunions in the Memorial Union. Following the game, the "30 Staters," a Corvallis OSU support group, and the OSU Alumni Association, will host the annual Homecoming Doughnut Jamboree at McAlexander Fieldhouse.

Wirth says the new activities were added following an alumni survey which suggested an expanded homecoming agenda for returning alums. "We went right to work to add some variety to homecoming weekend," Wirth explains, "and decided we would offer some of the activities our survey respondents said they would like to see included at homecoming."

Following the annual parade and bonfire Friday night, the Schools of Pharmacy and Home Economics kick off a full slate of Saturday activities with open houses beginning at 9:30 a.m. Deans Richard Ohvall and Kinsey Green, along with numerous faculty and staff, will be on hand to greet returning alums.

From 9:30-11:00 a.m., student representatives from a variety of OSU honor societies will conduct tours of campus. Tours will originate from the MU Concourse and depart every 15 minutes.

From 10-11:00 a.m., members of the Student Alumni Association will host mini-reunions by decade in the Memorial Union. The MU Main Concourse Directory will have room assignments. Wirth says participants will be free to visit both their own reunion and other reunions of their choice.

Wirth adds that special reunion activities are planned homecoming weekend for the Class of 1961. "At 8:00 p.m. Friday night, the class is invited to my house at 2565 NW Pendleton, Corvallis, for a 'no host' social hour," he says. "The next day, at the Annual Alumni Barbecue in McAlexander, we'll try to get the entire class to sit together, and then following the game we'll have a tailgater in the parking lot. Just look

(Continued on page 14)

oregon stater

Vol. 20, No. 6, September 1986, Oregon State University, Corvallis

At The Top

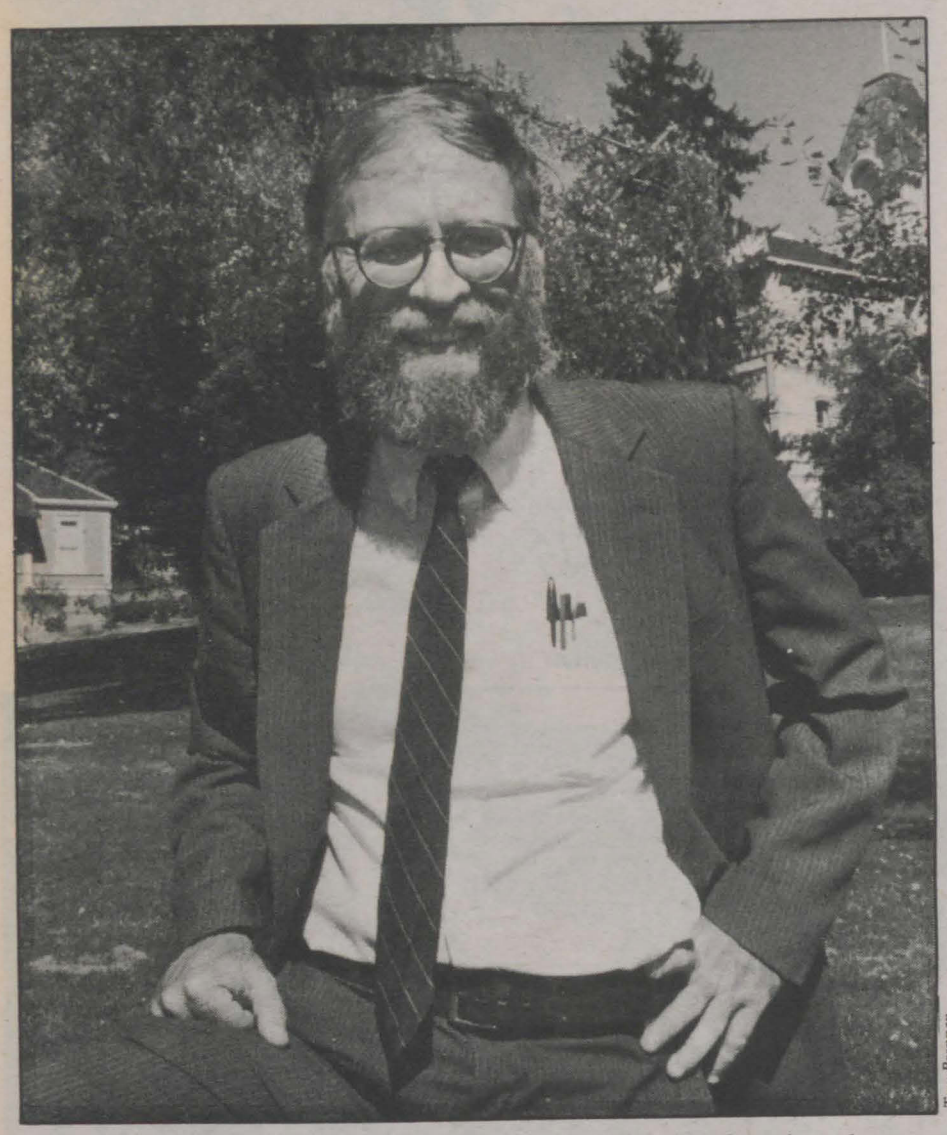
An Interview with OSU's Jack Davis, President of the NCAA

By George P. Edmonston Jr.
Photographs by John Bragg

For the past two years, office 141 in Gill Coliseum has been one of the most important offices in the world of college athletics. From this small, sparsely furnished room, Jack Davis, an OSU agricltural engineer, has served as president of what may very well be America's most controversial organization — the NCAA. In this exclusive interview for the Stater, *Dr. Davis talks at length about his tenure as NCAA president, Proposition 48, drugs, student athletes as professional entertainers, American values and the desire to "win at any cost," and a lot more. It's a look back at what many are already considering two of the most important years in NCAA history.*

(Continued on page 4)

Editor's Comments



Tom Brennan

Have you ever heard of a guy named Richard Bolles?

The only thing I know about him is that he's a writer and a consultant and has published quite a few books on how to find a job. His *Magnum opus* is a delightful publication titled (now don't laugh) *What Color is Your Parachute?* in which he dispenses a variety of do's and don'ts for the job market hopeful.

One of the biggest don'ts is ***don't put too much faith in what you see advertised in the want ads.*** He believes that: (1) The best jobs never make the want ads; (2) Many jobs are already filled by the time they're advertised; (3) If a job is in the paper, it's something nobody wants.

Bolles goes on with other reasons why he doesn't like want ads, but I won't bore you with the rest. To be honest, I don't remember the rest. What I do remember is how much of an impact *Parachute* had on me when I first read it (if you're looking for a job right now, do yourself a BIG favor and buy or borrow a copy) and how much (1), (2) and (3) above flashed through my mind when I first saw "Wanted. . . Editor. . . *Oregon Stater*" in the *Chronicle of Higher Education*.

It was my wife Cathy who came through with a suggestion that reduced my skepticism to the price of a stamp.

"Well, it'll only cost you 22 cents to find out."

This was something my job market guru hadn't covered and it caught me off guard. For the price of a stamp, huh? I fired off a letter.

That was last May. We were living in Baton Rouge, down in Bayou Country. When word came through from OSU that I was a finalist and would be flown out, I thought about how my wife had never lived anywhere but Louisiana, how my kids had never known any place but our small three-bedroom house on Kevel Drive. The 22 cents became a plane ticket.

Then the plane ticket became a job.

I remember how long it took me to say yes to the offer. . . about three seconds. My trip out for the interview left me with the firm belief that, if given the opportunity, and if Cathy was willing, the Edmonstons would live in Oregon. It's that kind of place. Coffee table books showing the mountains, waterfalls and coastline of this land fall far short of the real thing. One look at the Three Sisters in the fall and your life is changed. Period.

Cathy said it best. Our second weekend as residents, we took a trip up near Mt. Bachelor, to a small lake called Todd. If you've been there you know that Mt. Bachelor and the Sisters serve as bookends to this jewel of a place. A Kodak slide brought to life only much better. We were sitting in a field of wildflowers at the far end of Todd and my wife, in a voice more inspired than southern said, "What did we do to deserve this?"

I said nothing and then my face broke out in a large grin.

For the price of a stamp. . . .

****

If you take a few minutes to examine this issue of the *Stater*, you'll notice it differes in both appearance, format and content from previous *Staters*.

The reason is that this *Stater* marks the beginning of a transformation in our alumni newspaper, the result of a decision made by OSU's leadership to commit the necessary resources to the *Stater* so that it continues to serve as an effective communication tool for OSU alumni.

In the coming months, you'll be treated to strong features that interpret current student life, showcase faculty expertise, and link campus research to contemporary issues.

All in all, the *Stater* will carry on its long-standing tradition of serving the OSU family as a source for "continued learning," no matter a person's location or occupation.

It will take five or so issues to complete the metamorphosis so bear with us.

oregon stater

Vol. 20, No. 6, September 1986, Oregon State University, Corvallis

Contents

Features

Departments

(USPS 413-200)
(ISSN 0885-3258)

Published eight times a year — January, March, April, June, August, September, November and December — by the Oregon State Board of Higher Education at Oregon State University, Department of Information, Wallace E. Johnson, director.

Second class postage paid at Corvallis, Oregon 97331, OSU Alumni Association, 104 Memorial Union Building. Additional entry at Honolulu, Hawaii.

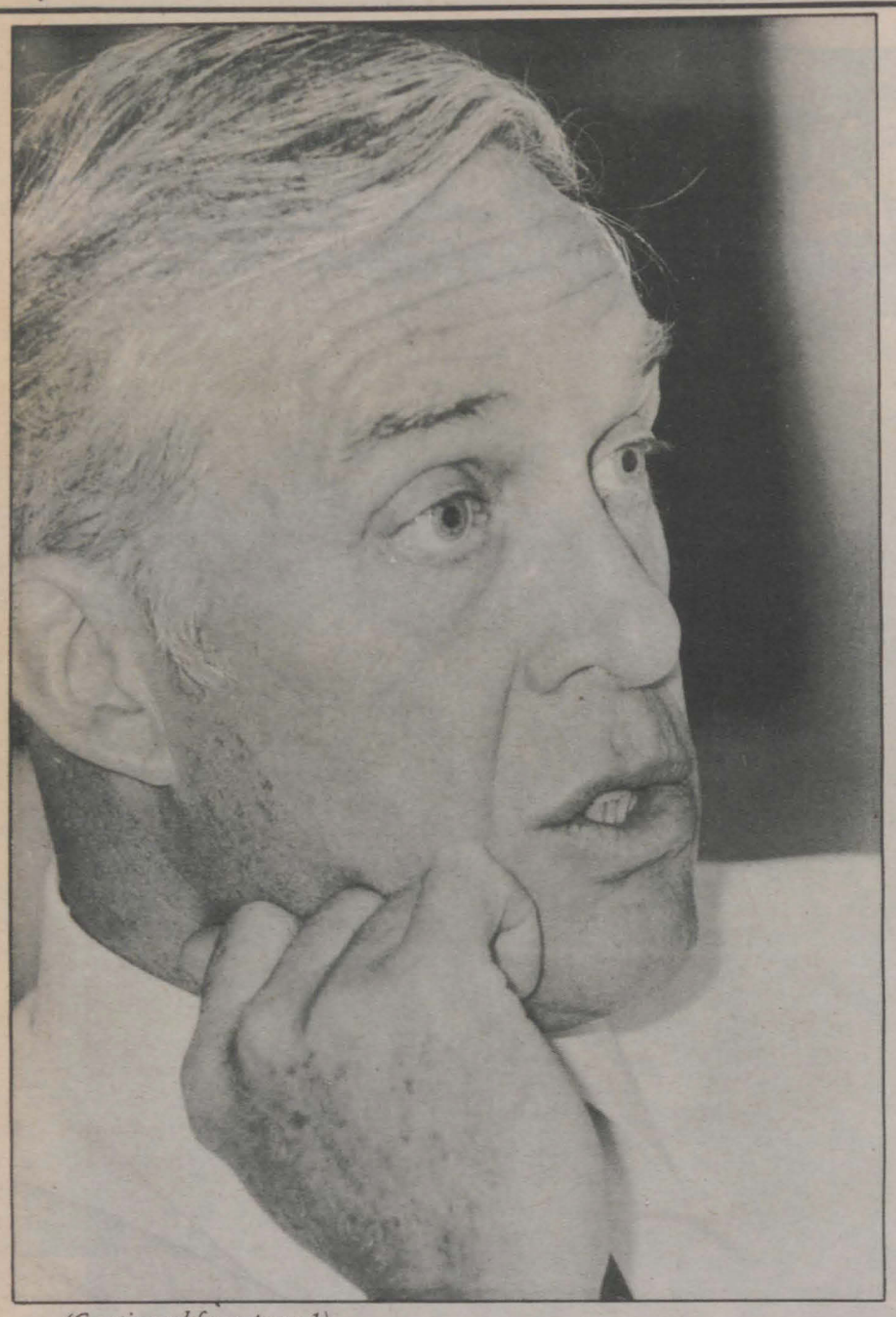
POSTMASTER: Send address changes to **OREGON STATER**, 104 Memorial Union Bldg., Corvallis, OR 97331.

OREGON STATER is the official publication of the Oregon State University Alumni Association.

Tom Brennan

This Year, Why Not Come Home for Homecoming?

Regardless of when you graduated or how long you were here, OSU used to be **home**. And it still is. Remember this as November 8 draws near. That's homecoming, a time of year set aside for your special visit **home**.



(Continued from page 1)

STATER: *What is an 'Aggie' doing as president of the NCAA?*

DAVIS: "(Laughs) When I was at Nebraska, I was head of the department of agricultural engineering. The faculty athletic representative at that time was the dean of engineering. He left as dean and became a vice president and I was appointed to take his place as both dean of engineering and faculty representative to the NCAA. That's how I got started in athletics and then I moved up here in 1971. OSU's faculty representative retired after I had been here about six months and since I had had previous experience as a faculty representative working with the Big 8 Conference, the president here told me I could have the job.

STATER: *"When did you decide to be more than just a faculty representative to the NCAA?"*

DAVIS: "Eight years ago I was nominated for a regional vice presidency, which put me on the NCAA Council, and I guess it was at that time that I really started getting interested in becoming more involved with the organization. Since that time, I have served as vice president and secretary treasurer of the NCAA, as well as president. What I've done, in addition to setting priorities for my time, is to use weekends and holidays and vacation time to pursue this particular interest. I haven't had any release time from Oregon State."

STATER: *"What are the responsibilities of your office?"*

DAVIS: "We have a staff in Mission, Kansas, a suburb of Kansas City, of about 110 people. The staff is headed by an executive director, a man named Walter Byers, who handles all staffing for committees and runs the association. Walter is a very dynamic person, an energetic man with a high level of integrity. He's one of the best administrators I've ever worked with and is the only executive director we've ever had. I'm telling you about Walter to say that I really don't get involved in the day-to-day operation of the NCAA. My function is like that of any president of any professional society where there is an executive director who runs everything. What I do is preside over the annual convention, preside over all council meetings, preside over the executive committee, which is responsible for running the organization, preside over the administrative committee, which has the authority to act for both the council and executive committees. I meet with the administrative committee by telephone every other week and do our business. So I have to attend and preside over a lot of meetings, and with each one I have to make sure the agenda is structured properly and so on. Now most anyone can preside over a meeting and most peple say that this is what the NCAA president is supposed to do. But I don't let it go at that. What I've tried to do is push some leadership into the organization so I function as a person who has attempted to provoke some change, to generate the ability of the organization to respond to new ideas. I also act on behalf of the association on all legal matters. When we go to court, for example, I represent the NCAA. If there are congressional hearings on a matter, I represent the NCAA in Washington. I've presented a number of talks on behalf of the NCAA to other organizations and have appeared on many radio and television talk shows. It is a full-time job.

STATER: *"What are your responsibilities to Oregon State?"*

DAVIS: "In the early years, I had both teaching and research responsibilities to take care of in addition to my responsibilities to the NCAA. It was a matter of having enough time to get both jobs done. When I was elected president in February of 1985, I was relieved of my duties as director of the Ag Experiment Station and assigned to be NCAA president 100 percent of the time. Oregon States's president told me that if I need full time to take care of my NCAA duties that it was important enough for this university that I be allowed to do that. My major responsibility to Oregon State is to serve as its faculty athletic representative to the NCAA, in addition to serving as president of the entire organization.

STATER: *"What does it mean to Oregon State to have the president of the NCAA on its campus?"*

DAVIS: "I think it means within the profession the same as having the president of another professional organization here on campus. The NCAA, of course, carries a lot more notoriety, and I think it does bring a certain measure of prestige to Oregon State. The NCAA is a well-known organization, and it's a member organization, which means that all the other member organizations know that since 1985, Oregon State has had the presidency. Next year, Auburn University will have the job."

STATER: *"Does the NCAA pay you a salary?"*

DAVIS: "No."

STATER: *"So your paycheck comes from OSU?"*

DAVIS: "That's right."

STATER: *"You've been a very active president these past two years. Have you attempted to steer the NCAA in a certain direction or toward a certain philosophy?"*

DAVIS: "That's difficult to say because the initiatives one takes within a member organization always involve working with the various member institutions, using ideas from a lot of different people. Sometimes it's difficult to say who originated an idea or direction or philosophy. Oftentimes, these things happen simultaneously. For example, in the area of drugs, a lot of us worked awfully hard in getting the NCAA to adopt a drug testing policy. Who can say who really had the idea in the first place? Policies with regard to academic issues, I did take some initiatives here to try and soften the concerns of some of the predominantly black institutions. They were opposed to Proposition 48 — the new rule that raises academic entrance requirements at NCAA member institutions for incoming freshmen — and so I have taken some steps in that direction and I'm pleased that we hung tight on these new academic requirements and I'm proud that we did. The original idea for Proposition 48 came three years ago at the 1983 convention. Seeing it through to where it is now in effect in 1986 is one area in which I have been very active. Another interest has been that of helping member schools maintain academic integrity and institutional responsibility and control over programs.

I'm a very strong advocate of grassroots responsibility for programs. There have been many times when I've had to convince Walter that we should hold off on something until we get the grassroots sentiments on a topic and he has agreed because he's very sensitive to the feelings of the other member schools. So at least I've had the feeling you've expressed, that I've wanted not to be a figurehead but to be very active in the whole process.

STATER: *"Has the role or mission of the NCAA in the last several years, then, been to try and inject the organization with a new sense of integrity?"*

DAVIS: "In a general way, I suppose. The problems in academics stem from the fact that many institutions have capabilities for admitting students who have marginal potential for success. Take, for example, special admit students. Some institutions have not provided support services for these kids once they've admitted them in to study and play a sport. And we've said to our member institutions that this is not going to happen anymore. If a student who is at risk is admitted, that student has to be provided with the necessary support to have a reasonable chance of success. So we're moving very strongly in this direction and I think it impacts favorably on the integrity of higher education. We've taken some steps recently that make it a lot tougher on student athletes than on regular students. The 'Progress Rule' is an example. It requires that all NCAA athletes show at least 36 credit hours toward a specific degree at the end of each year. A student athlete can no longer enter an institution and take four years to search for a major. In the past, the rules allowed students to major in **eligibility**, which in every case, was a result of an institution abusing the rules. What we're saying now is that we're not going to tolerate this anymore."

STATER: *"The NCAA has been very sensitive in these areas over the last few years."*

DAVIS: "Yes. The media tend to blame athletes or to blame the NCAA or intercollegiate athletics for these problems. The NCAA, on the other hand, blames higher education, which is where the blame has to be placed. Some of us believe that athletics and athletes have been taking the blame for drugs and drug problems and academic ills. We feel the problem is throughout higher education and has to be solved right away. Athletes are role models for young children. Athletes can be physically injured from drugs and drug abuse as we have been made so painfully aware in 1986. So the NCAA has decided that we're simply going to have to take some steps to try and prevent what is happening. We're in an age now where the NCAA and higher education are going to have to work more closely together to deal with the issues. It is true the NCAA and higher education are reaching for the same goals. We're all working toward integrity and honesty in programs."

STATER: *"Has the NCAA been under any pressure from the American people to initiate some of these changes?"*

DAVIS: "The pressure has been more from the presidents of our member schools than from the American public. The public, on the other hand, doesn't want any of the academic ills that have been in the press lately. The public has responded strongly on that. They don't want trouble in higher education and that's that. In some cases, however, the public doesn't care if institutions cheat on one another, but the presidents care and have been very vocal in saying that it's tough to be competitive without a certain high level of honesty and integrity. Out of this philosophy has come the new penalties that have been leveled against certain schools in recent years. Particularly against schools involved in repeated violations. We now might cancel a school's schedule if they are guilty of making the same mistakes over and over. So in a very real sense, the presidents are reflecting the mood of the American people. I've said a number of times that if an institution cheats on its student athletes by keeping them eligible without giving them an education, or if it cheats on its fellow competitors with recruiting violations or financial aid violations or whatever, how do you know that in-

stitution isn't cheating on its other students?''

STATER: *''In the years you've been associated with the NCAA, What have you learned about American values? Are we a nation that wants to win at any cost?''*

DAVIS: ''As Americans, we're a mix of people. Even the people involved in athletics are a real mix of people. I don't think you can characterize the American public as being of one mind, an en masse attitude of win at all cost. Nor do you have a large group of people out there longing for the days of true student athletes, the pristine amateurism of Yale and Harvard ten years before the turn of the century. A lot of people want to back a winner, to see their school on top in athletics. I think the SMU case is a fine example of what can happen, where one of that school's own trustees violated NCAA rules to give SMU a recruiting edge over the competition. You do find that kind of attitude even among the top people in higher education, people who are supposed to know better. And we've had some presidents who have flaunted their own institution's academic rules to gain an advantage. But these are the exceptions.

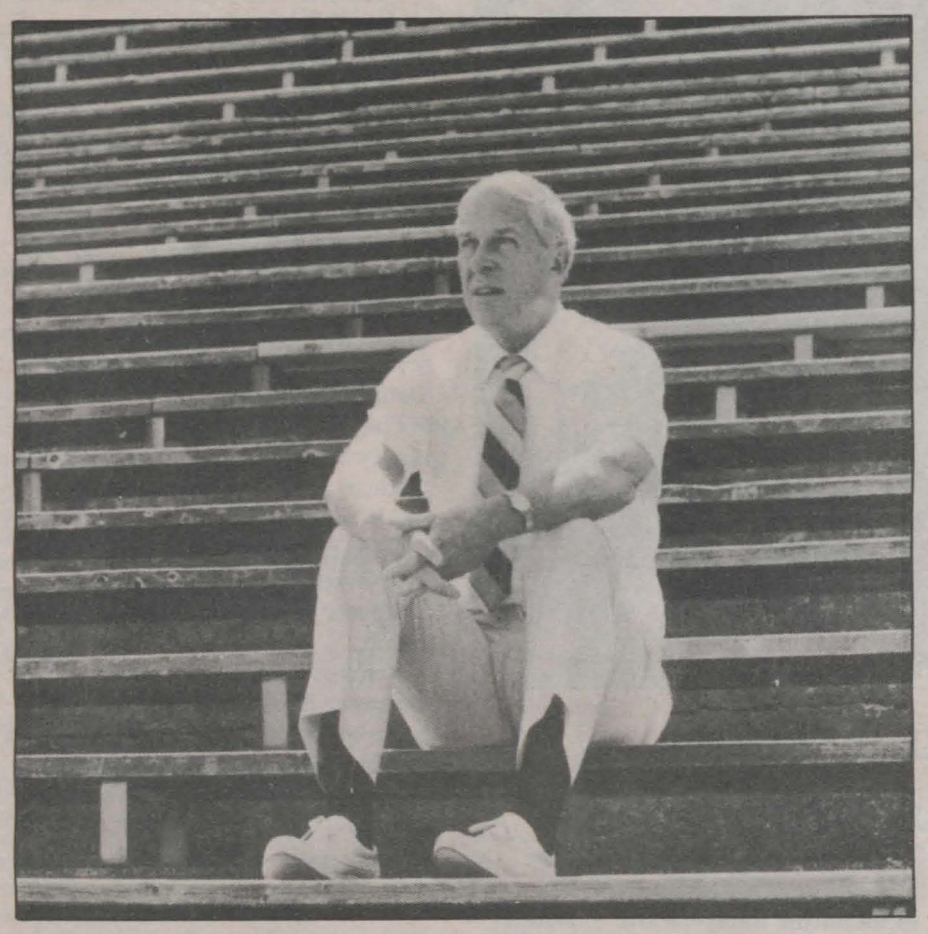
If one depended solely on the press for information about the NCAA, one could get pretty cynical about the whole NCAA process. But I've been in it long enough to know that most people are honest and want what's good for the student athlete. Today, people are placing more emphasis on the athlete as a student first, then an athlete. The feeling is that a person who plays a sport at a college or university must be a real student. This flies in the face of those who say that giving a student room, board and tuition isn't enough, that the students who generate the big sports bucks should be given more than they're getting. At the NCAA, we say NO to this attitude and instead are trying to turn back the clock to some extent, to a time when amateurism had a particular meaning. Getting back to your question, there's a very healthy attitude toward intercollegiate athletics in this country. The concern that I have is that since most institutions' athletic programs are financed from revenues and since the cost price squeeze is on, a lot of schools are hard pressed to maintain the extent of their programs. They're having to cut back while trying to maintain quality.''

STATER: *''Do you think Proposition 48 has the potential, as some people fear, to change the complexion of American intercollegiate athletics?*

DAVIS: ''Not all all. If this were the case, it would have to be predicted on the belief that athletes of a certain race are not as intelligent as athletes of another race and this is simply not true. Proposition 48 is, however, going to effectuate certain changes at the high school level. Let me explain. Our research indicates that black males don't test as high as white males on standardized national achievement tests, tests like the SAT and ACT. The same is true for women. But our research also shows that most of those students who didn't do well on these tests did eventually complete their degrees and did go on to lead very productive lives. In other words, a large percentage of students who, if playing today, would not have met Proposition 48 requirements in 1986, were admitted into school and did go on to graduate. The research was conducted on the class of 1977. So why is all this true? Why don't blacks test as well as whites? In my opinion it's because their respective high schools are not preparing them for these tests and not preparing them for education after high school. Yet their success rate in college is the same as for whites. At this point we need to take a look at what our high schools are doing with our young kids. Proposition 48, if it does anything, will bring about some changes in the way some high schools are preparing their kids for the future and the changes will be for the better. Proposition 48 will be the key to reform at the high school level.

STATER: *''Several years ago, the 60 or so institutions that make up the CFA, the College Football Association, threatened to quit the NCAA and form their own organization. The feud, as I recall, was over televising football games and the power of the NCAA to control who would be on the tube and how many times. Does this threat still exist?''*

DAVIS: ''No.''



STATER: *''What was done to smooth the troubled waters?''*

DAVIS: ''Well, the CFA fostered the plan that changed the NCAA's policy about televising football games. The suit Georgia and Oklahoma entered, the one that went all the way to the Supreme Court, was funded by the CFA, and I think those institutions have learned by now all the disadvantages of not belonging to the NCAA, of going off on one's own. Deregulation hasn't meant all that much for those institutions wanting it. In fact, at most institutions, it has meant diminished revenues. The CFA is a football organization and I think even those institutions know there's more to life than football. A group of 60 schools that would pull out of the NCAA would have to structure a championship program for all their sports. Once they did that they would disenfranchise themselves from competing for any national championships sanctioned by the NCAA, which are recognized as the national championships of this country. And so I think that all institutions in the NCAA today realize that belonging to our organization has decided advantages.''

STATER: *''The NCAA has been accused over the last several years, most recently by LSU head basketball coach Dale Brown in a SPORTS ILUSTRATED cover story, of using 'Gestapo' tactics when attempting to uncover recruiting violations. That is, the NCAA has a team of very slick investigators who can, with certain athletes, get them to say what the NCAA would like to hear.''*

DAVIS: ''I would strongly refute these or any similar allegations. My experience has been that the enforcement program is so stringent that a staff member caught doing something like that would be terminated. We simply don't put up with something like that. We do have to interview students because we don't have the capabilities to gather evidence under subpoena or to have people testify under oath. We have to deal with a lot of hearsay evidence, a lot of circumstantial evidence, the willingness of students and boosters to talk, but we're awfully careful when gathering facts. Oftentimes, what we do in an investigation is take what the student has given us and try to compare that with another testimony. A lot of our allegations come from disgruntled student athletes who prefer to remain anonymous and so that leaves us with statements that have to be verified. Sometimes, it's the judgment of the investigator that determines who we believe. And maybe someone in another involved party doesn't agree with the judgment and gets upset. The NCAA recognizes that the reputation of an institution's athletic program does tend to spread around and if you've got a program that is operating out of control, it doesn't take long before the other coaches in that conference know it. They're out recruiting, in most cases, the same athletes, and they know all the reasons why one recruit signed with some other university and not with them. The kids will say what is happening and then the word starts getting around from student to student and from coach to coach and then the pattern builds and you start to see an institution operating outside the rules. That's when we try to get some people in there, to see if we can help get things turned around. Our process says that we have to come in with a preliminary inquiry and to notify the president of an institution that we have some allegations that lead us to believe there might be a problem. On a related matter, we're also working to prevent violations by working with students as they're being recruited. Take our 'Big Brother' and 'Big Sister' programs, for example. Here, we interview the top blue chippers in the country to make them aware of what a recruiting violation is. We have 'Project Intercept,' where we interview all the top junior college prospects and educate them on the same topics. So we have a system that is working and you don't hear 'foul' from an institution until that school has been caught doing something wrong.''

STATER: *''What do you do with a coach found guilty of recruiting violations? It seems the NCAA just passed new legislation regarding the guilty coach.''*

DAVIS: ''We have a requirement now in the constitution of the NCAA which says that an institution must include provisions in its contracts for termination in the event a coach is caught breaking NCAA rules. What we're saying is that we can no longer accept the practice of an institution giving a coach a binding contract, which forces an institution to keep a coach who continually cheats. We also follow coaches for two years. If they go to another school, they are under the same sanctions they would have been under had they stayed at the institutions caught cheating.''

STATER: *''The last several years have been the most controversial yet exciting years in NCAA history. Do you agree?''*

DAVIS: ''More or less. There were some really interesting times in the past but I would say that when you look at the involvement of the President's Commission, the involvement of the presidents being formally and organizationally active in the NCAA, that to me represents one of the major changes in the NCAA in recent years. It has helped generate a much higher degree of respect within and outside the organization.''

STATER: *''Whose idea was it to involve the presidents?''*

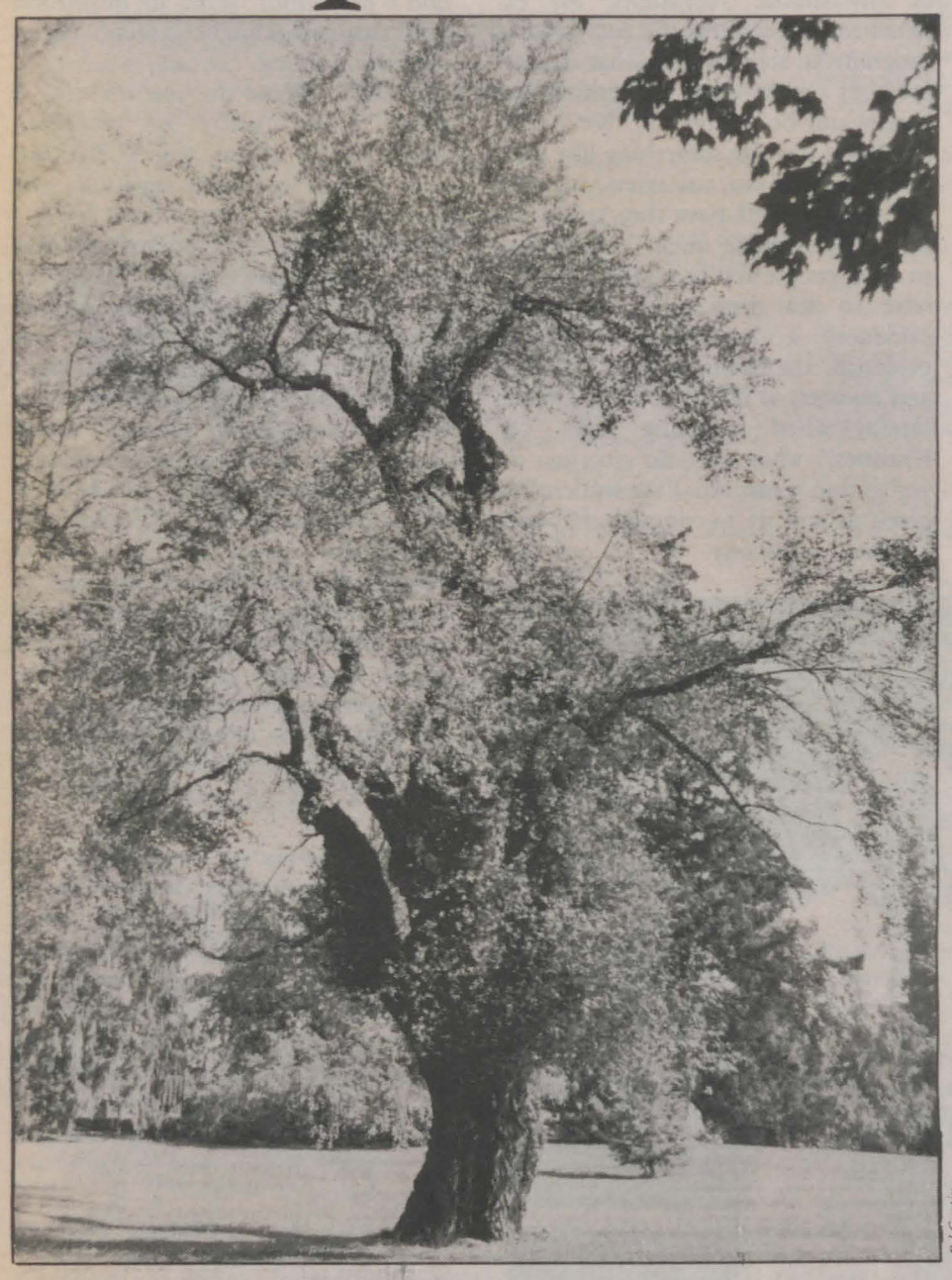
DAVIS: ''We've always had a strong principle of institutional control in the NCAA and we've left a lot up to the presidents. In the past, they really didn't care all that much about what was going on but they do now. We had talked about it for some time but I guess we were responding to competitive pressures that came from the American Council for Education that they take over the NCAA. ACE developed a proposal that would have disenfranchised member institutions from the NCAA, for what it proposed was that a Board of Presidents be given ultimate authority over the organization. We felt that was not in keeping with our idea that the NCAA should be a member organization. So we responded with a different approach using the President's Commission, which the membership adopted.

STATER: *''You've addressed this question many times but it's a question important enough to repeat here. Student athletes today are considered by many to be highly skilled entertainers who are helping their respective institutions generate major entertainment dollars. Because of this, the argument goes, they should be paid to a far greater extent than is now being done. What do you think?''*

DAVIS: ''About the money. We used to allow institutions to pay incidental expenses of $15 a month, a sum not very realistic today. And so this could be done again, with the amount of money more in line with today's prices. Right now, we have Pell Grants, we've got state need grants, so that if there are student athletes who need help, based on their family's financial situation, a student can receive more than the full ride in athletics. If there is a need, help in the form of financial

(Continued on page 31)

Campus News



Ed Cartin

Fabled OSU 'Trysting Tree' Falls To Woodsman's Axe

A lovers' secret meeting place, whither amorous undergraduates at the turn of the century stole under threat of stern punishment, was taken from the Oregon State University campus, Sept. 27.

The fabled "Trysting Tree," an aged 60-foot gray poplar now dangerously filled with decay and rot, was chopped down just prior to the Stanford game in Parker Stadium, but not before a memorial "celebration" that morning.

The tree, just north of Education Hall, was one of only a handful of trees on a 35-acre farm bought for the old Corvallis College in 1870. It gained its nickname soon after the college moved into Benton Hall in 1888 and students discovered its branches could provide a functional backdrop for romantic interludes, then forbidden on campus.

"The name seems to have come naturally with the use of the tree," said the student newspaper, *The Barometer*, in 1923.

Officially a Canadian white poplar but commonly referred to as a silver or gray poplar, the Trysting Tree often found an official, or at least tolerated, place amid campus life in the early part of the century, even though OSU students of the last two decades were virtually unaware of its existence.

Members of the graduating class of 1901 placed a large boulder and a cement plaque beneath it as their gift to the college. The rock, with its weathered "1901" inscription, still provides a place to sit in the shade of the Trysting Tree.

In 1918, when he composed the OSU Alma Mater, Homer Maris included the lines: "I love to wander on the pathway/Down to the Trysting Tree. . . ."

For all its sentimental value, though, the Trysting Tree has become too hazardous to leave standing, said Chuck Woosley, grounds management supervisor for the OSU physical plant.

"Nothing practical can be done to preserve it, even though we have tried to extend its life in recent years by pruning," Woosley said. Rot is present in the tree's trunk and nearly all its large limbs. Probes stuck into open decayed parts have gone four feet without striking solid wood.

Typically a short-lived tree, the gray poplar was chopped down by Tom Cafazzo, a Corvallis tree specialist, under a state contract.

Just prior, a Trysting Tree Memorial Ceremony was conducted by the OSU Office of University Relations at the tree.

OSU President John V. Byrne and Rob Phillips, acting vice president for university relations, gave short talks. Several alumni toasted the tree with sparkling cider. OSU music students sang the Alma Mater to close the brief ceremony as Cafazzo trimmed off a few small branches.

Later, while the OSU football team played the Stanford Cardinals, the rest of the tree was removed.

Those mourning the loss of the Trysting Tree may be encouraged, Woosley said, by a cutting from the original tree, now growing 754 feet to the east.

OSU to Host Computer Expo '86

Oregon State University will host the largest computer and technology show in the state next month during Computer Expo '86.

"Oregon: The Center of Future Technology" is the theme of the show, which will be held at OSU's Memorial Union and LaSells Stewart Center Oct. 16-17.

A large vendor show, seminars and workshops, a laser fantasy show and a computer art show are some of the attractions planned, according to Kazi Ahmed, OSU's Computer Expo coordinator.

"The show attracted thousands of visitors last year and we expect an even larger crowd this year because of more offerings," Ahmed said. "The Expo will show the state's strength in technology and scientific research, and how they help Oregon's growing economy."

Seminar topics range from home computers, to artificial intelligence, to computer graphics. Most of the 25 scheduled workshops are free, though there will be a charge for three of them, Ahmed noted.

The trade show will feature a variety of hardware and software products from exhibitors representing nearly 60 major companies.

Door prizes include a Macintosh 512 KE system, an IBM personal computer, a variety of software, and others.

Vendors who wish to display computer hardware or software at Expo '86 should contact Kazi Ahmed at OSU's Milne Computer Center, telephone 754-2494.

Old Growth Issues Analyzed in Educational Program

An educational program on old growth Douglas-fir forests of the Pacific Northwest is being prepared by the College of Forestry at Oregon State University.

This four-part program, which explores the formation, ecology and controversy surrounding the use of these forests, is designed both as an educational tool for school teachers and to better inform a variety of government agencies and public groups. The entire program, which was funded by the U.S. Forest Service, will be complete by March 1987, but a 12-minute slide show that summarizes the complicated issues will be available by December, and reservations for it can be made immediately by contacting the OSU Forestry Media Center.

"National forest plans are now being made that will determine the future of large amounts of old growth forests, and the issues involved are often sensitive and controversial," said Barbara Middleton, OSU project leader for preparation of this program. "We feel it's important for everyone involved to be as well informed as possible. This program incorporates the work of about 20 planners, economists, ecologists, biologists, industry representatives, wildlife specialists and others. We wanted a balanced and accurate approach."

Many people do not fully understand how an old growth forest is different from old trees or other types of forests, or the special characteristics and intricate relationships of an old growth ecosystem, said Middleton. The program explains how an old growth forest is formed; the interactions involved between wildlife, vegetation, soil and water; the economic value of old growth forests for timber, recreation of ecological purposes; and how to get involved in national forest planning processes.

"Our main purpose with this program was to educate people in a larger sense about old growth forests and their special aspects," Middleton said. "Because of that, we pointedly did not include a discussion of some of the most emotional issues, such as the spotted owl debate. They are just one part of a much larger question."

This program, which includes a slide-tape show, written education exercises, fact sheets and a reference list, will be tested this fall in about 25 schools across the state. A final version of the program will be complete next spring. The basic program is designed for a 4th-6th grade audience, Middleton said, but it can be adapted for other grades and portions can be used with any age group.

The program should help give everyone involved a better idea of the forest service planning process, Middleton said, including the important and complex factors that have to be considered in this issue.

McKenzie Scholarship Fund Started

The OSU chapter of Gamma Sigma Delta, agriculture honor society, has started a fund drive to endow a yearly $1,000 scholarship in memory of Dr. Fred F. McKenzie, a member of the Animal Science department from 1944 until his retirement in 1960. Dr. McKenzie died in March 1986.

The McKenzie Memorial will be one of the Agricultural Honors scholarships given each year to entering students in the College of Agricultural Sciences.

Dr. McKenzie was best known for his teaching and research in the field of animal reproductive physiology. His research led to the widespread practice of artificial insemination of farm animals. Some of his technical publications about the behavior of breeding animals are considered classics and are still referred to in current literature, some 50 years after the work was done.

Dr. McKenzie, a former national president of Gamma Sigma Delta, was honored for his work by the American Society of Animal Science and the International Congress on Animal Reproduction and Nutrition.

Contributions to the endowment fund for the McKenzie memorial scholarship may be made through the E.R. Jackman Foundation, the development arm of the College of Agricultural Sciences.

OSU Removing 12 Trees to Help Prevent Dutch Elm Disease

George Edmonston

Twelve elm trees are being removed from Oregon State University's campus this month as a way of managing for Dutch elm disease.

The virtually unstoppable fungus has not been detected on campus yet, said Chuck Woosley, grounds management supervisor for OSU. But if it does arrive, the removal of the trees should slow its advance and lessen its impact.

The 12 trees felled this month will bring to 145 the number of elms taken from campus since the management program began in 1978, Woosley said. By getting rid of them now, the university can give replacement trees time to grow large enough to ensure a good tree cover on campus when and if the disease strikes.

Most of the trees to be removed this year stand around the quad in front of Kerr Library and Kidder Hall. Individual trees will be taken from near Milam, Langton, Strand Agriculture and Weatherford halls, Woosley said.

Dutch elm disease, which produces a wilting and drying of the leaves and eventually the trees' death, usually is transmitted by the smaller European elm bark beetle or by the natural grafting of the roots of adjacent trees.

The disease has devasted stands of elms in the East and Midwest United States. One infected tree in Portland was discovered in 1977. Three more there and several in Eugene were detected this year, prompting increased concern over the possible presence of the disease in Oregon, Woosley said.

OSU is planting 56 different species of trees to replace the elms that are being removed. By using a mix of such trees as oak, maple, katsura, thornless locust, ash and spruce, the university hopes to lessen the impact of future outbreaks of tree-killing diseases and insects, should they appear, he said.

OSU had 334 elms on campus in 1978. Only about 120 will remain when the management program is finished in the next few years, Woosley said.

Pine Beetle Invades Central Oregon

While a costly infestation of the mountain pine beetle has largely run its course in the forests of northeastern Oregon and Idaho, the epidemic is gaining speed in central Oregon.

According to a recently completed study at Oregon State University, the amount of timber killed by this pest in Baker County of eastern Oregon was more than 93 million board feet in 1977, but has dropped in recent years to less than one percent of that amount. Meanwhile, Deschutes County near Bend has seen timber losses in the same period rise from four to almost 160 million board feet each year.

The infestation is still rampant in Deschutes, Klamath and Lake counties of Oregon, the study showed, and will continue at a high level for the next several years. Portions of northeastern Washington, which have not yet been hard hit by the beetle, may also have an increasing problem in coming years.

"Although much of the timber killed by the mountain pine beetle can be salvaged, there is a substantial reduction in its value," said James Funck, an associate professor of forest products at OSU, who conducted this survey with research assistant Robert Avery.

Since 1969, the mountain pine beetle has killed almost four billion board feet of timber in Oregon, primarily lodgepole pine.

This beetle is native to the western United States, according to OSU forest entomologist Timothy Schowalter, and periodically erupts in outbreaks of 5-10 years duration. The beetle usually attacks weak or diseased trees.

"Modern forest management that permits dense tree growth through fire prevention is part of the problem," Schowalter said. "Natural, regular fire cycles help keep down brush, reduce competition and provide nutrients, and can prevent a major infestation. But many of our forests are now weak and predisposed to insect and disease damage."

Possible solutions to this problem, Schowalter said, include thinning of weak trees, increased fertilization, or use of controlled fire. In the South, controlled burning of pine forests has been a common timber management tool since the 1940s. Richard Waring and other OSU forest science researchers are now analyzing some of these techniques in test stands of lodgepole pine near Prineville, he said.

Shad — the New Fish Fad?

ASTORIA — If you have a lemon, make lemonade. That old saying is the idea behind a new research effort centered at the Oregon State University Seafoods Laboratory here.

The lab is within a couple hundred feet of the Columbia River, up which a large number of shad travel each year. Though edible, the fish is overlooked by fishermen, and few of the roughly three million that go up the Columbia to spawn are caught.

This is a missed opportunity, OSU fisheries specialists say, and they are taking steps to turn Columbia River shad into a marketable seafood item. In a sense, they're at work making shad lemonade.

On the East Coast shad are a traditional seafood, and shad roe, the fish's eggs, are considered a delicacy. But, says Dave Crawford, director of the Seafoods Lab, on the West Coast markets for shad have never developed.

"Shad have had a problem gaining consumer acceptance because they are bony, fatty fish, with what many people consider a 'fishy' flavor," he says. "Our approach is to remove these objections by developing products, made from shad, in which the bones are removed and the flavor and texture are changed."

It may sound like alchemy or black magic, but what this transformation actually involves is the latest techniques of seafood processing. With funding from OSU Sea Grant, Crawford and his coworkers are adapting techniques used in making surimi.

Surimi is an adaptable seafood protein product, Crawford explains, which can be made from many different kinds of fish and can be turned into a variety of final product forms. Developed by the Japanese, surimi products best known by Americans are the imitation crab strips and flakes now common at fish markets and restaurant salad bars. American consumption of such imitation crab has increased more than 10-fold in recent years, from six million pounds in 1981 to 88 million pounds in 1985.

The transformation of shad at the Seafoods Lab is similar to, but modifies the steps used in making crab flakes. The OSU researchers begin by filleting the one-to-three-pound adult shad by hand. The fillets are then run through a machine which separates skin from bones. The flesh is minced, washed, and transferred to an extractor which presses the water out. Some undesirable flavors are washed out as well, and what's left is mainly a mass of fish protein.

To remove remaining particles of flesh and bones, the pulp is put into a refiner, and voila! Finally, what once looked like fish emerges from the refiner's nozzle looking more like thin spaghetti. It is rather dry, crumbly in texture, light in color and it doesn't smell particularly fishy.

"We're experimenting with techniques that will retain as much protein as possible, rather than having it washed down the drain," Crawford says. Techniques include combining less water in the washing operation and a mild acid solution which essentially causes the protein to collect and not to be washed out. Yield of flesh from the original whole fish is 21 percent, most of which is protein.

With the dewatered fish protein in hand the researchers are halfway to their goal; to produce an end product two more steps are required. First the protein is stabilized by addition of a solution, containing phosphates and egg white, that results in a gelatinous product. Then this protein gel is heated. Depending on the kind and duration of heat applied, a variety of product forms can be obtained, says Crawford.

Primary attention at the OSU lab has been directed at developing a smoked shad product that will have "the characteristics of smoked salmon," Crawford says, "and will have good flavor, but will also have the advantages of a cooked product. It would be easy for retailers and consumers to handle, to slice, and it would have good shelf life," he says.

So far, Crawford has made only experimental quantities of the smoked shad product, which he describes, rather secretively, only as "tasty." He says he is optimistic that further experience with the processing techniques will result in other experimental products that could "be very appealing" to fish eaters.

Underwater Diving — the New Old-Fashioned Way

To be able to breathe underwater for extended periods, divers earlier in the century depended on air supplied by a hand-pump at the surface. It was a simple and effective process but was replaced by more complicated mechanical devices for shipboard pumping, and by portable scuba tanks. Now an Oregon State University researcher believes hand-pumping is an idea whose time has come again.

"A friend of mine was planning on sailing from Oregon to Tahiti," Jim Washburn relates, "and he wanted to be able to inspect his boat and make routine repairs underwater." A scuba tank wasn't really the best solution, Washburn says, because refilling wouldn't be practical; and gas or electric compressor units would require fuel sources and would take up space. The problem intrigued the OSU researcher, who is with the Ocean Engineering staff and is also the university's diving officer. "I got to thinking about a simple design, something pumped by hand and easy to operate and maintain."

With financial support from Oregon Sea Grant and Devine Salvage and Diving Company of Portland, Washburn developed a prototype pump. It is being tested in diving situations, and Washburn says he's pleased with the device's performance.

It is a simple design. Standing, the person doing the pumping moves an upright metal bar forward and back, which operates the pistons of the two cylinders. The pistons are small, less than four inches in diameter. Air passes by one-way valves through the cylinders down a hose into a holding tank and then to a longer hose and, finally, to the diver's mouthpiece. Thirty-four strokes of the shaft per minute maintain the air-flow to the diver at a "normal" breathing rate of about one cubic foot per minute, the engineer says.

The pump is intended for shallow dives of less than 25 feet, and it offers several advantages, says Washburn. With willing and able pumpers at the surface, a diver's time underwater is "essentially unlimited." The unit is compact and has no complex mechanical systems to break down. There is no need for other fuel sources.

OSU Researcher Seeking Mother-Daughter Pairs For New Study

A researcher hoping to discover the effect that women helping their elderly mothers has on mother-daughter relationships is seeking volunteer participants from Portland to Eugene for her federally financed study.

Alexis Walker, associate professor of human development and family studies at Oregon State University, plans on interviewing 200 pairs of mothers and daughters. Her study is sponsored by an $86,000 grant from the National Institute on Aging.

Each mother would receive $10 for two 30-minute personal interviews, conducted at the beginning and end of a two-month period. Each daughter would get $20 for two 60-minute interviews, also at the beginning and end of the two-month period, and nine 10-minute telephone conversations.

The only restrictions are that the mother be 65 or older and widowed or otherwise without a spouse, that the daughter live within 45 miles of her mother, and that the mother have no mental disability.

"My purpose is to examine how giving and receiving assistance affects the mother-daughter relationship," said Walker, who came to OSU's College of Home Economics in June after eight years at the University of Oklahoma.

"My ultimate goal is to help older parents and their adult children give and receive assistance in such a way that their relationship continues to be an important source of emotional support for both of them," she said.

"I want to look at things that make a difference.

"Parents, especially mothers, are living longer lives. Daughters often are employed and doing things quite different from the way their mothers did. The number of services by government agencies are decreasing. Despite all these pressures, I want to find out the positive things that will help maintain mother-daughter relationships in the future," she said.

Those interested in learning more about her project or who want to volunteer may call Walker toll-free at 1-800-462-3287, extension 3645 or extension 4765. Corvallis callers should dial 754-3645 or 754-4765.

Gaining Economic Muscle

The rapidly rising number of older Americans is giving new meaning to the idea that "a penny saved is a penny earned."

In the past two decades, retirement and investment income in Oregon and Washington have grown much faster than conventional earned income. According to a recently completed study at Oregon State University, these two sources now account for one out of every three dollars of personal income in the region, and this trend may have a significant impact on everything from consumer sales to park district budgets.

"Much attention has been focused on our society moving from a manufacturing base to a service economy," said Bruce Weber, a professor of agricultural and resource economics at OSU and principal investigator on this research. "But I don't think there's near as much awareness of the shift in where income is coming from. Per capita, older adults now have more discretionary, spendable income than any other age group. That's quite a transition and a major economic force to contend with."

These economic trends should be of particular importance to the business community, Weber said.

Beyond that, the changing demographics have implications for taxes, public services, and management of public resources.

"Older adults have different demands and interests than a younger population," Weber said. "They now control a great deal of the society's available income, and a city trying to pass a new park budget might be well advised to consider the recreational services desired by this group, perhaps including a dance hall or community theatre as well as children's playgrounds."

This research was done through the Western Rural Development Center at OSU, in cooperation with Gary Smith and David Willis of Washington State University. Copies of the report, WRDC paper number 30, are available from that agency for fifty cents.

Weather Forecasts Aid Firefighters

Hot, dry weather, lightning storms and gusty winds are the prime ingredients of forest fires, as seen in this year's fire season, one of the worst on record. As of late August, more than $10 million has already been spent in Oregon to fight about 300 fires over almost 100,000 acres. As many as 8,000 firefighters were engaged in the battle.

Although weather conditions help create and contribute to the forest fire problems of the Pacific Northwest, there may be room for improvement in the use of weather forecasts in firefighting.

According to Allan Murphy, a professor of atmospheric sciences at Oregon State University, the use of weather forecasts is "not very systematic or sophisticated" by the people who plan fire control tactics.

Improved techniques to get the right weather information to the right people, at the proper time and tailored for their specific needs, could be of considerable value in this annual battle, Murphy said.

An OSU research project to study this problem began last year, to estimate the economic value of better weather forecast information in the typical decisions firefighters face, Murphy said. The first phase of the study, which focuses on decisions about how to mobilize people, equipment and other resources to fight fires, should be complete by early 1987.

Considering the magnitude of these efforts in Oregon and elsewhere in the nation, even a small increase in firefighting efficiency would quickly pay off, Murphy said.

"Fire managers use weather information when they make decisions about how to fight a fire, but they can't really say how the information is used," said Murphy, a past state climatologist for Oregon and an expert in the economic evaluation of weather forecasts. "We think this research will show that a formal analysis of these decisions, and a more systematic use of weather forecasts, will have a definite dollar payoff.

"We hope it will help convince fire managers to incorporate this information in a more consistent manner into what are obviously complicated and difficult decisions," Murphy added.

Better weather information for firefighters, Murphy said, would continue to emphasize the critical elements such as temperature, humidity and wind, but it would also tailor the forecasts for the particular needs of fire managers. This would include a clear definition of the time and location for which a forecast is valid, and the degree of certainly for each variable.

Ozone Problems May Force New Regulations

Mounting concerns about the effect of atmospheric ozone on agriculture and human health could soon prompt more strict emission regulations for the automobile industry, according to a researcher at Oregon State University.

OSU research has documented almost $2 billion in agricultural losses each year from current levels of ozone pollution, which cause reduced yields in corn, soy beans, wheat and other crops, according to Richard Adams, a professor of agriculture and resource economics at the university. Other studies have found evidence that high ozone levels in some areas, such as the Los Angeles basin, are a human health hazard of some significance. The combination of these two problems, Adams said, may lead the U.S. Environmental Protection Agency to further reduce its allowable levels of atmospheric ozone.

According to Adams, ozone is a form of oxygen and a natural component of the atmosphere in two largely separate layers. In the stratosphere, or upper atmosphere, ozone plays an important and useful role in blocking ultraviolet light rays that would otherwise be harmful to plant and animal life. But in the troposphere, the lower portion of the atmosphere that we breathe, ozone is a harmful pollutant and occurs naturally only at very low levels.

Adams has researched the relationship between ozone levels and economic damages to vegetation for the past five years, with more than $500,000 funding from the EPA. He recently completed a report on these agricultural effects as one part of an EPA review of ozone effects, which included studies in several disciplines and will form the scientific basis for any upcoming changes in the national standards for ozone. Changes in those standards may be made within one year, he said.

The industrial revolution and the automobile have greatly elevated ozone levels in the troposphere, Adams said. Ozone can be formed when hydrocarbons and nitrogen oxide from automobile exhaust or power plant emissions react with sunlight, and some ozone levels near large urban areas are three to four times higher than clean air over the ocean. The current EPA regulation stipulates that ozone may not exceed .12 parts per million for more than one hour per year in a given area, although many locations already routinely surpass that standard, Adams said.

"In one recent year, ozone levels in the L.A. basin exceeded the EPA limit more than .50 days, even though they have some of the world's most strict emission standards, and are making great efforts to deal with their air pollution problems," Adams said. "Other studies have shown that about one third of the counties in the U.S. violate the EPA standards on ozone each year."

Meeting ozone standards in the future may get more difficult, Adams said. Prompted by the latest research findings, the EPA is considering lowering the allowable ozone levels.

To accomplish that, the principal need would be tighter emission standards for automobiles and trucks, he said. To a lesser extent, the ozone problems are also caused by industries such as coal power plants and oil refineries, and more pollution controls might also be needed in this area. Each would involve added costs to industry, he said.

"While reducing ozone involves certain costs, the health effects from current ozone levels are apparently more serious than had been thought in the past," Adams said. "When you combine that with the known effects of ozone on agricultural production and other vegetation, stricter regulations may be justified."

According to EPA documents, high ozone levels may be related to throat dryness, reduced lung function, difficulty in breathing, wheezing, nausea, changes in blood chemistry, and possible chromosomal aberrations.

According to Adams, tighter restrictions may be justified even if human health were not a concern. Ozone can be harmful to plastic and rubber materials, causing deterioration such as the stiff, crumbling rubber in an old car door seal. Ozone is a contributor to the soupy haze and poor visibility in many urban areas. And ozone has more impact on vegetation than any other known pollutant.

"We've found that normal concentrations of ozone may be cutting many crop yields from 5-15 percent, at an actual cost that approaches $2 billion a year," Adams said. "Among the most ozone-sensitive crops are soy beans, potatoes, cotton, wheat, corn, and some vegetables and citrus fruits. Farmers in some high-ozone levels, like the Imperial Valley of California, have already begun emphasizing crop varieties that are more ozone resistant. High ozone levels can also damage other types of vegetation, such as forests."

A lowering of ozone to the level the EPA is considering, Adams said, might reduce these losses by about 70 percent.

Young Coho Salmon Could Offer Economic Promise

NEWPORT — Hugging the shore of Yaquina Bay estuary is an experiment that may offer a glimpse of the future of Oregon's salmon industry.

Attached by a line to the dock of Oregon State University's Hatfield Marine Science Center is a modest-looking, floating frame, 20 feet on a side. Hanging on the plastic-and-wood frame is a net 15 feet deep, filled recently with 1,500 one-year-old coho salmon.

In August a second net pen was filled with coho, and by early fall, if all goes according to plan, these coho will have grown to about three-quarters of a pound apiece and be ready for harvest. Such pan-sized fish represent the growth market for salmon, industry trends show.

Net, or pen, raising of salmon is already done on a commercial scale in Norway, Chile, British Columbia and in the state of Washington, observed Bill McNeil, an OSU fisheries professor and specialist in salmon aquaculture. "I don't see any reason why it couldn't work here," he said.

McNeil emphasized that his net culture experiment has begun as a "very low-key trial, very much a bootstrap operation." The researcher, who directs the Cooperative Insitute for Marine Resources Studies at the Hatfield Center, obtained the coho for the experiment from a private company, Anadramous, Inc.; he'll also use some chinook salmon. For rearing the yearling fish until they're ready to be transferred to the floating cages, McNeil has put back into use a small hatchery facility on the center's grounds.

McNeil believes that net culture could be an efficient and profitable operation at the Oregon coast. Since the salmon are raised completely in captivity, it's possible to get a 60-70 percent yield of harvestable fish from the original fertilized eggs. And since the fish would typically only be raised to three-quarters of a pound, they could be harvested in about a year. Ocean-going coho take three years before they are harvestable.

McNeil, formerly manager of Oregon Aqua Foods, a private salmon ranching company, and before that the founder of the OSU hatchery at Netarts Bay, has a longtime experience with raising salmon in Oregon and Alaska. He believes that protected areas of the Oregon coast could lend themselves to year-round production.

The water temperature in the Yaquina estuary, for example, usually doesn't vary more than a few degrees throughout the year, he observes. And technically it would be possible, by raising the juvenile fish in freshwater hatcheries at different temperatures and therefore different rates, to have fish ready to transfer to the net pens on a continuing basis.

Although in his current experiment with two pens and 3,000 coho McNeil only expects to yield about 2,000 pounds a year, he notes that net pens covering one acre yield, "conservatively," 100,000 pounds per year. Twenty-five acres, then, could yield annually two and a half million pounds of salmon, or "more than the Oregon troll fishery," he added.

At the current market price of $1.50-$2 per pound for whole pen-raised salmon, "It doesn't take a lot of imagination to see that this could make a significant supplement to the Oregon fishing economy."

On a summer afternoon looking out from the university buildings across to the Newport harbor, McNeil offered a broader vision of participation in this "potential new economic activity."

He noted the unemployment in the fishing industry and the basic simplicity of net-pen raising techniques. Perhaps some trollers would get interested in diversifying, he said.

For the moment, the researcher is intrigued to watch what happens with his experiment. Things could go wrong, he cautions. Perhaps diseases will afflict the salmon once they're in their nets, or the movement from fresh to salt water will weaken them, or harbor seals will break through the nets and wreak havoc with hypothetical profit margins.

"You don't know unless you try," says McNeil.

OSU Press Names Nine Oregonians To New Editorial Board

The Oregon State University Press, Oregon's only university press, has taken the unusual action of appointing faculty from three other institutions to positions on its newly established editorial board.

The three board members — from the University of Oregon, Portland State University and Willamette University — will join six from OSU. All were appointed by OSU President John V. Byrne. The new board and the members' terms become effective Sept. 1.

Primary function of the new board will be to review manuscripts under consideration for publication and recommend which should be accepted.

Byrne, by selecting three faculty from other universities, also sees the new members as representing the press among their academic colleagues and the public, and encouraging the submission of manuscripts for possible publication.

"The press serves not only OSU but the people of Oregon and the Pacific Northwest," Byrne said in announcing the new editorial board.

The members from other institutions will help "emphasize this commitment and improve the press's ability to serve the region more effectively," Byrne added.

Appointed to three-year terms on the board are: Richard Maxwell Brown, Beekman professor of Northwest history at the University of Oregon and nationally known expert on Northwest American studies; Michael Strelow, associate professor of English at Willamette University, former editor of the Northwest Review and member of the publications committee of the Oregon Commission for the Humanities; and Sandra Ridlington, an editor with Sea Grant communications at OSU.

Byrne gave two-year appointments to the following: Gordon Dodds, a professor of history at Portland State University and prominent Northwest history scholar; William Denison, associate professor of botany and curator of the mycological herbarium at OSU; and Stewart Holmes, a research associate in forest products in the OSU College of Forestry.

One-year appointments were given to three OSU faculty who served on the press's former Board of Governors, predecessor of the new editorial board. They are: Kerry Ahearn, associate professor of English; Patricia Brandt, head of social sciences and humanities at Kerr Library; and Michael Kinch, assistant head of the library's science and technology division.

The OSU Press celebrated its 25th anniversary in May. Since its beginning in 1961, it has published 142 scholarly works and books of particular significance to the Pacific Northwest, said Jeffrey Grass, director.

Mark Floyd

A Gathering of Vice-Presidents

OSU's new vice-presidents watch as merit awards are presented to faculty and staff during OSU's "University Day," a day-long program held September 18 to kick off the 1986-87 academic year. From left to right they are: Graham B. Spanier, new vice-president for academic affairs and provost; William Slater, new vice-president for university relations; and L. Edwin Coate, new vice-president for finance and administration. Approximately 800 faculty and staff attended the affair, which was hosted by William "Bud" Davis, Oregon's Chancellor of Higher Education, and OSU president John Byrne.

New Vice Presidents Among Administrative Changes

As a result of national searches conducted during the summer, Oregon State will welcome three new faces to top administrative posts on campus.

Graham B. Spanier will arrive early in the term to assume duties as vice president for academic affairs and provost, the senior vice-president at OSU. **William Slater** was named vice president for university relations; and **Frederick H. Horne** will be the new dean of the College of Science.

In addition, **Ernest J. Briskey**, dean of the College of Agricultural Sciences, recently announced his resignation. **Michael J. Burke**, associate dean and director of the college's academic programs, will serve as acting dean while the University conducts an international search.

Spanier is currently vice provost for undergraduate studies at the State University of New York at Stonybrook. He will replace acting vice president **Bill Wilkins**, who will return to his position as dean of the College of Liberal Arts following a sabbatical leave.

Spanier holds a Ph.D. in sociology from Northwestern University; he earned both his master's and bachelor's degrees in sociology and psychology from Iowa State University. Before moving to SUNY at Stonybrook, Spanier served as an associate dean in the College of Human Development at Pennsylvania State University, where he taught from 1973-82. He has penned more than 100 professional publications in his field, including eight books.

"I think OSU presents an unusual opportunity," he told Sally Duhaime of the OSU *Barometer*. "It is one of the outstanding institutions of higher education in the United States. It has a very fine record of accomplishment, but it also has a lot of potential for growth."

One of Spanier's goals is to achieve greater cooperation between disciplines.

"Bringing liberal arts and science together is a very important area of collaboration that hasn't been fully exploited in the past," said Spanier. "One of the great challenges in higher education today for academic administrators is trying to decrease some of the barriers between disciplines and encourage cooperation across those lines."

He should receive ample support in this direction from Slater, who is interested in correcting some of the image problems OSU has had in the past.

"The fine arts do survive and thrive at OSU, and liberal arts are stronger than it appears," Slater told Corvallis *Gazette-Times* reporter Jule Wind. "I would put producing faculty in the forefront and show them off."

Slater comes to OSU from his position as dean of the School of Fine Arts for Eastern Washington University in Cheney, Wash. He will oversee all external relations and internal communications, including disseminating information about OSU to the press, the Legislature, alumni, the business community, and foundations. The position had been filled by acting vice president **Rob Phillips**, who will return to his position as professor of journalism on campus.

Slater earned a bachelor's degree in political science from Tufts University. He holds a master's degree and a Ph.D. in communications from Stanford University. Prior to joining the faculty at Eastern Washington University, he had worked as a reporter and editor for the Baltimore Afro-American Newspaper, and as a reporter, news director, and anchor for radio and television stations on the East Coast.

The new College of Science dean will arrive Oct. 1 from Michigan State University, where he has served as associate dean of the College of Natural Science. He will replace **Thomas T. Sugihara**, who resigned last November.

A professor of chemistry, Horne received his bachelor's degree at Harvard University, where he was a Harvard National Scholar. He went on to the University of Kansas to earn his Ph.D. as a National Science Foundation Fellow. He also studied as a NSF postdoctoral fellow at Stanford University for one year.

Horne was a member of the chemistry faculty at Stanford during 1963-64 and has been at Michigan State since. He was most recently associate dean in charge of research and graduate programs.

Michael J. Burke was recently named acting dean of the College of Agricultural Sciences following Ernest Briskey's resignation to become a senior adviser to the Kuwait Institute of Scientific Research. Burke was chosen for the acting post in an on-campus search, according to Bill Wilkins. The University has begun preparations to launch an international search for a dean.

A professor of horticulture, Burke came to OSU in 1984 from the University of Florida, where he was chair of the fruit crops department. He had previously served on the faculties at Colorado State University and the University of Minnesota.

Burke holds a B.A. in chemistry from Blackburn College in Illinois and a Ph.D. in biophysics from Iowa State University. He also did postdoctoral work in chemistry and botany at Minnesota.

Oceanography's New Computer

Oregon State University oceanographers will soon have a lofty view of the coastal waters off the Pacific Northwest which could provide important data for research.

With the help of a new $200,000 computer and satellite image processing system, which should be completed by December, scientists will be able to study the wandering currents, biological processes and water temperature of a vast section of ocean from northern California to Canada.

Sophisticated satellite maps will monitor changing ocean conditions on a regular basis, and could potentially be of value to commercial fisheries.

The new system was made possible through grants from NASA, the National Science Foundation and the Office of Naval Research.

"From a scientific perspective, we want to learn more about the relationships of winds, ocean currents and coastal biology in this area, and how these elements change over time," said Dudley Chelton, an associate professor of oceanography who will operate the new computer system.

"For the type of wide-ranging data we need, satellite measurements are the only practical approach," Chelton said. "Information from ships passing through the area would be too sporadic, expensive and time consuming. But without this new computer system, there would be no way to process the available data from existing satellites."

Among the phenomena OSU researchers wish to study, Chelton said, is a large, fast-moving jet of cold surface water which is frequently found extending into the Pacific Ocean off Cape Blanco, Ore. The data may also be of use in studying year-to-year variations in the Oregon coastal waters and their relation to "El Nino" disruptions in the tropical Pacific Ocean.

Pell Grant Availability Increases

Some Oregon State University students who were notified in spring that they were ineligible for federal Pell Grants may now be eligible to receive them, according to the OSU Office of Financial Aid.

Instead of an estimated $4.9 million, OSU will now have approximately $5.15 million to distribute to eligible students, said Keith McCreight, director of the office.

Early proposals by the Reagan Administration had caused OSU to expect 10 percent less money for Pell Grants in 1986-87 than it received in 1985-86, McCreight said.

Money added by Congress July 2 means OSU now expects to receive 6 percent less for the upcoming school year, he said.

Pell Grants are for undergraduate students only and do not have to be repaid. The awards, which had a $2,100 maximum last year, are based on a student's need and cost of education, and serve as a foundation on which other financial aid resources may be added.

Faculty News

Dr. Justus Seely, professor of statistics, will be the new head of that department in the College of Science. He will replace David Faulkenberry, who is taking a two-year leave of absence to work with international agriculture programs in North Yemen.

Dr. William Simonson, associate professor of pharmacy, has been named contributing editor of the monthly newsletter, *Drug Therapy for the Elderly*. Last spring, Simonson, with the OSU College of Pharmacy, won a nationwide competition sponsored by the National Association of Retail Druggists to develop a national certificate program in community pharmacy for the elderly.

Dr. Leslie H. Fuchigami was honored as a Fellow of the American Society for Horticultural Science, one of the highest honors bestowed to a society member. His selection is in recognition of his outstanding contributions to horticultural science, his excellence as a teacher and advisor, and his service to the society.

Dr. Allen Agnew, a courtesy professor of geology, was named "1986 Mineral Economist of the Year" by a subsection of the American Institute of Mining Engineers. Agnew served until 1981 with the Library of Congress as a senior specialist in environmental policy for mining and mineral resources advising members of Congress and their staffs.

Dr. Norman Lederman, professor of science education, has been awarded a presidential citation by the Association for the Education of Teachers in Science. Lederman was cited for his activity in science education research and publishing.

Dr. David Robinson, a nationally known scholar and researcher specializing in the work of Ralph Waldo Emerson, has been awarded a $62,000 grant from the National Endowment for the Humanities. The grant will fund a summer seminar for a dozen secondary teachers selected from around the nation on an 1837 Emerson text titled, "The American Scholar."

Retired OSU professor of English **Ruth Harriett Carter** recently published a collection of her poetry, "The Little Bells of Rhyme," available by mail from Mrs. Carter at 524 NW 10th, Corvallis, 97330. Proceeds from sales go to Zonta Club of Corvallis, a service organization of professional women.

Drs. Patricia Frishkoff, Fred A. Shelton and **Jack C. Bailes** recently received Certificates of Merit for articles they published in *Management Accounting*, the journal of the National Association of Accountants. Frishkoff, professor of accounting, received her award for "Is Your Controllership Function Out of Control?" Shelton, assistant professor, and Bailes, associate professor, coauthored "How to Create an Electronic Spreadsheet Budget."
Dr. James Trappe, professor of forest science, botany and plant pathology, will serve as national president of the Mycological Society of America this year. In his professional career, Trappe has received more than $2 million in grants and published more than 200 scientific research papers in the field of mycology.

Dean David Nicodemus and **Vice President Theran Parsons** will be honored at a retirement celebration on Saturday, Nov. 22, 7:30 p.m., at the Corvallis Elks Lodge, 444 NW Elks Drive. All alumni and friends of the honorees are invited to attend. Tickets are $12.50 per person. For details, please contact the University Relations Office, AdS 524, OSU, Corvallis, 97331; (503) 754-3733.

OSU professor emeritus of horticulture **Dr. Melvin N. Westwood** will receive the 1986 Outstanding Researcher award from the American Society for Horticultural Society Saturday (Aug. 16). Westwood was honored for three decades of research leading to significant advances in fruit crop production.

Dr. Ludwig Eisgruber, a farming technology expert and professor of agriculture and resource economics, has moved to Bangladesh for three years to establish the first graduate-level agricultural institute in that country. The project could have many commercial, academic, and scientific advantages for Oregon, he said.
Dr. O.E. Smith, director of the OSU Extension Service and associate dean of agriculture, is the president-elect of the Pacific Division of the American Association for the Advancement of Science. He will be president when the division holds its 69th annual meeting at OSU in 1988.

OSU's journalism department chair, **Fred C. Zwahlen, Jr.**, has been named to two committees of the Oregon Newspaper Publishers Association. Appointments are to the Educational Committee and the Voorhies Award Committee.

The National Science Foundation has selected four students with bachelor's degrees from OSU to be graduate fellows for the 1986-87 academic year. Recipients are **William K. Barth** of Pendleton, a 1985 electrical engineering graduate who will work at Colorado State University; **Sonja K. Berge** of Grass Valley, a 1982 graduate and currently a doctoral candidate in genetics at OSU; and **Joel F. Schildbach** of Hillsboro, a 1986 graduate who will study chemical engineering at California Institute of Technology.
In addition, six other students received honorable mention awards from the prestigious science foundation. They are **Ronald L. Hart**, '82, of Tigard; **Paul A. Hill**, '84, of Rainier; **Janita M. Boechler**, '86, of Clackamas; **Donald E. Velasquez**, '86, of Corvallis; **Rex M. Quaempts**, '85, of Adams; and **Sherri J. Willard**, '85, of Eugene.

Vice president for research and graduate studies **George Keller** has been elected chair of the University/National Oceanographic Laboratory System, comprised of 59 academic institutions. UNOLS is the primary coordinator for the nation's academic oceanographic research vessel program.

Redefining the Past, a festschrift written in honor of **William Appleman Williams**, is being prepared for distribution through the OSU Press. The collection of essays honors Williams as one of the two or three most influential living historians, according to OSU history professor William G. Robbins. Williams, who retired this year, is noted for numerous books, including *The Contours of American History* and, most recently, *Empire As a Way of Life*.

Dr. Michael Schlesinger, associate professor of atmospheric sciences, traveled to the Soviet Union for a meeting of atmospheric scientists in Leningrad. Many of the top experts in the field met to compare research on the effects of increased levels of carbon dioxide on the earth's climate.

News Briefs

OSU recently completed its first year of directing an English language institute in Sana'a, Yemen, where as many as 100 Yemeni students prepare each term for studies at universities in the United States. Eleven OSU instructors operate the institute, financed by the U.S. Agency for International Development. Michael C. Witbeck, who administers the program from the OSU campus, calls it an ideal situation. "The students there are very attentive, highly motivated, and very appreciative of the opportunity to learn English."

The OSU Office of International Agriculture has been selected to lead a four-year, $7 million agriculture development project in Malawi, an independent country in east-central Africa.

Financed by the U.S. Agency for International Development, faculty from OSU and three other universities will help the Malawi Ministry of Agriculture find improved methods of farming for that nation of 7.5 million people.

Dr. Thomas J. Cusack, an agricultural economist, and Dr. Ray William, a horticulture weed specialist, are the Oregon State experts chosen to work on the project. Dr. David G. Acker will direct the work from campus.

Phi Kappa Phi will continue to be OSU's only national academic honor society. In June, the United Chapters of Phi Beta Kappa denied OSU's request for a campus chapter, citing an overemphasis on sciences, a low number of books per student in the library, and low SAT scores as reasons for the refusal.

The campus committee applying for the chapter knew the request might not be successful, according to Carl A. Kocher, professor of physics who chaired the committee. However, he felt the application would help clarify Phi Beta Kappa standards and suggest areas OSU may want to pursue for academic improvements.

The Senate Appropriations Committee recently approved $2 million in the Department of the Interior budget for the Forest Intensive Research Program at Oregon State. Oregon's Sen. Mark Hatfield chairs the Senate committee.

This marks the eighth year of funding support from the federal government for the reforestation program, which has an annual budget of $2.4 million. Several Oregon counties and private timber companies also contribute to its support.

The research effort has developed new techniques that produce up to 90 percent survival of seedlings in what was once considered "worthless" land, according to George Brown, associate dean of the College of Forestry.

The OSU College of Pharmacy, with the cooperation of Associated Oregon Industries, will be sponsoring a seminar on "Preventing Drug Abuse in the Workplace" at the Red Lion/Lloyd Center in Portland October 31. The one-day seminar is intended for management personnel, health and safety managers, human resources managers, employee assistance specialists, occupational medicine specialists, primary care physicians, and occupational health nurses. National and local experts will address a variety of topics, including drug testing and prevention. Applications and further information for the Seminar are available from the OSU College of Pharmacy, (503) 754-3725.

Campus Calendar

Fall Term Events — Open to the Public

Sept. 9-Oct. 15	Giustina Gallery: Artists of Blackfish Gallery
Sept. 26	"Improving Your Counseling Skills," Endeavors for Excellence, MCW, $, 754-2677.
Sept. 27	"Changing Times in America: Perceptions & Reality" Before the Play by Play, MCW, $
Oct. 3	"Effective Management Strategies for Women," Endeavors for Excellence, MCW, $, 754-2677
Oct. 7, 21	Candidate Forums: County Commissioners, State Senate, and City Council Candidates, Engr. 7:30 p.m.
Oct. 11	Tokyo String Quartet, Friends of Chamber Music, Austin, 8:00 p.m., $, 745-7154
Oct. 14	Ava Pauling Peace Lecture, John K. Galbraith, Austin, 8:00 p.m., 754-3464
Oct. 15	Convocations & Lectures, John K. Galbraith, Austin, 8:00 p.m., 754-2101
Oct. 15	"Professional Burnout & Productivity," Endeavors for Excellence, MCW, $, 754-2677
Oct. 16	Oregon Symphony, Corvallis/OSU Music Assoc., Austin, 8:15 p.m., $, 6 p.m.-9 p.m. 754-7097.
Oct. 18	Western Oregon Body Building Championships, Austin, 7:00 p.m., $, 758-9440
Oct. 19	William Doppman Recital, Austin, 8:00 p.m. $, 754-4061
Oct. 25	"Gene Research at OSU," Before the Play, MCW, $
Oct. 23-Nov. 12	Giustina Gallery: Kristina Kennedy Daniels — Paintings. Reception, Oct. 23, 7:30 p.m.
Nov. 5	Greg Smith Singers, Corvallis/OSU Music Assoc., Austin, 8:00 p.m., $, 6 p.m.-9 p.m. 754-7097
Nov. 12	Musica Femina, Engr., 8:00 p.m. 754-4061
Nov. 19	The Musical Offering, Friends of Chamber Music, Austin, 8:00 p.m. $, 745-7154
Nov. 22	"The Domestic Roots of Soviet Foreign Policy," Before the Play by Play, MCW, $
Nov. 23	OSU/Corvallis Symphony, Classics by Teenagers, Austin, 3:00 p.m. $, 754-4061
Nov. 28	"Rain, Tribute to the Beatles," Benton County Sheriff Posse Benefit, Austin, 7:00 p.m. $ (Pre-sales by phone)
Nov. 19-Dec. 16	Giustina Gallery: Western Oregon State College Art Department Faculty. Reception Nov. 23, 7:30 p.m.
Dec. 4	Youth Symphony Concert, Austin, 7:30 p.m., $, 757-5907 a.m. 757-5835 p.m.
Dec. 7	Johnny Limbo and the Lugnuts, Corvallis Police Department Benefit, Austin, 2:00 p.m., 4:30 p.m., 7:00 p.m. $ (Pre-sales by phone)
Dec. 14	"The Nutcracker," Eugene Ballet, Festival Corvallis, Austin, $, Concert Time to be Arranged
Dec. 17	"Achieving Excellence," CareerTrack, Engr. $, (303) 447-2323

$ — Admission or Registration Charged
MCW — Murdock Conference Wing
Austin — Austin Auditorium
Engr. — Construction & Engineering Hall

Foundation News

OSU Foundation Revenues Top $18 Million

The Oregon State University Foundation brought in more than $18 million this fiscal year, up 57 percent over last year's $11.4 million. The previous high — $11,862,097 — was in 1984 and was just $300,000 more than 1985.

"The increase in revenues is the fruition of fund-raising efforts that have gone on for years," says Don Wake, OSU '58, a trustee and treasurer of the organization.

"We received several large donations this year. They don't just fall out of the sky. It takes time — years — to cultivate such contributions and this speaks well of the efforts of Jim Dunn, executive secretary of the Foundation from 1963 to 1986, former OSU President Robert MacVicar, and others.

"It also speaks well of the Foundation's investment committee," adds Wake, "and the work of Columbia Management Company, manager of the endowment portfolio. They have done an outstanding job."

John Evey, executive vice president of the Foundation since May 1 of this year, agrees with Wake. He attributes the record high revenues to three things, "First, two bequests totaling $1.5 million matured. Second, we received several large outright gifts that benefited the FourSight! effort. And third, the return on our investments was exceptional."

The two bequests were the $1 million estate of the late Edgar P. Hoener and a $550,000 endowment from the estate of Eric Smith. In his will, Hoener, a former publisher of forestry trade journals, established an endowment fund through the OSU Foundation in the name of his late wife, Dorothy D. Hoener. Mr. Hoener died last November. According to Carl Stoltenberg, dean of the College of Forestry, interest from the fund will be used to provide scholarships for deserving students, part time jobs in the field of forestry, and expense money for senior students to attend seminars and conferences.

In late December, OSU officials announced Smith's bequest. It will support students and programs in the College of Engineering. Smith was a 1923 graduate of OSU in engineering.

Outright gifts to FourSight! included the $1 million gift from F. Wayne and Gladys Valley to benefit the Center for the Humanities.

In addition, two anonymous gifts totaling nearly three-quarters of a million dollars benefited two other FourSight! areas — $300,000 to build much-needed student housing at the Hatfield Marine Science Center and $391,000 to benefit advanced materials research.

Several other large outright gifts, such as equipment valued at $500,000 for the College of Engineering from Control Data Corporation, added considerably to the revenues.

The market value of the Foundation's endowment grew by more than $7 million this year, from $12.2 million to $19.4 million. Trustee Bill Knodell, OSU '51, chairman of the investment committee, explains that this was possible not only because some significant donations were added to the endowment, but also because the securities markets boomed and investments were especially good. Net contributions totaled $3.4 million and investment additions totaled $3.8 million.

Columbia Management Company has managed the Foundation's endowment portfolio since 1981. In that time the portfolio's market value has grown from $3 million to $19.4 million. The Foundation's investment objectives are: 1) to provide a return that will yield a minimum net seven percent ordinary income on a year-to-year basis; and 2) to meet or exceed a nine percent average return over a five-year period.

"The past two years have helped Columbia Management exceed our five-year nine percent average return objective substantially," notes Knodell. "The 1986 average return equals 26.1 percent and 1985 was 32.1 percent."

He adds, "Over the last five years the fund has compounded an average of 20.7 percent which places it in the 10th percentile when compared to the Wilshire Median Fund (a national universe of similar funds)."

This year saw another important milestone reached. Thanks to an intense effort on the part of a large group of alumni, friends, and students, the OSU Fund, the annual giving program, topped $1 million. Equally important is that over 22,300 people contributed to the Fund, up over 500 donors from last year. Erin Haynes, director of the OSU Fund, noted that the full effect of this gain will not be felt for years.

"Giving is a habit that is developed over the years," he explains. "As time passes and people become more financially capable, they increase the size of their gifts. At the same time, we hope their feelings about OSU or about their college or department, or about a special program grow stronger. If that's the case, individuals will often choose to make a commitment to help the program that helped them while they were in school."

Haynes quoted a recent letter transmitting a gift of stock valued at $100,000 as a good example. "Never as a struggling student and poverty stricken new parents did we even dream that we would some day have the wealth to give for others at this magnitude. We are eternally grateful."

Linus Pauling Gift

Linus C. Pauling, the only individual to hold two unshared Nobel prizes, has added $10,000 to the Ava Helen Pauling Lectureship for World Peace.

Dr. Pauling established the lectureship at OSU in 1982 in memory of his late wife, Ava Helen Pauling, in tribute to her lengthy career of striving for world peace.

The new gift, announced in late August by the OSU Foundation, brings the lectureship endowment to nearly $50,000.

This is not the first time that Dr. Pauling has contributed to the lectureship. And many others have contributed as well. Additionally, the endowment was doubled last April when the Foundation held a $100-a-plate testimonial dinner as part of a three-day celebration focusing on Dr. Pauling's achievements as a scientist and peace activist.

It was at that time that Dr. Pauling announced his intention to deposit at OSU his science and peace papers, his two Nobel Prize medals, and other awards and books as well as Ava Helen Pauling's papers relating to her career as peace worker, feminist and social activist.

The Ava Helen Pauling Lectureship has had a series of distinguished speakers. Dr. Pauling, who graduated from OSU in 1922, inaugurated the lectureship in 1982 with his talk "The Path to World Peace." Other lecturers have been Paul C. Warnke, chief U.S. negotiator for the Strategic Arms Limitation Talks; Helen Caldicott, founder of the worldwide Physicians for Social Responsibility;

Mark Floyd

Dr. Linus Pauling

and George W. Ball, former deputy Secretary of State for the United States.

This year's speaker will be John Kenneth Galbraith, the noted economist, who will present his lecture October 14 in OSU's LaSells Stewart Center. Galbraith, who is the Paul M. Warburg Professor of Economics Emeritus at Harvard University, is a Ph.D. in economics from the University of California, was a Social Science Research Council Fellow at the University of Cambridge, and has taught at California and Princeton as well as at Harvard.

During the Kennedy administration he was the U.S. Ambassador to India and he has been variously associated with other Democratic administrations as an advisor.

As former editor of *Fortune*, Galbraith's most recent book is *The Anatomy of Power*, published in 1983. His other recent volumes include *The Nature of Mass Poverty*, *The Voice of the Poor*, and his memoirs, *A Life in Our Times*.

The lectureship is free and open to the public.

Foundation Sets New Goals

Fresh from the record-setting success of raising $1,053,127 from 22,352 donors this past year, the OSU Fund is embarking on an even more vigorous campaign for this year.

The new goals are $1.2 million and 24,500 donors.

Foundation officials recently announced that the annual giving program is also heading in a new direction this year. When alumni are contacted by mail or phone they will be asked to give to the area of their choice.

"There will be four broad areas to choose from," says Erin Haynes, director of the OSU Fund, "and each person contacted will be given a choice."

The first area is called "The University Fund." Donations designated for this area will be used by the university wherever the university's need is the greatest.

The second area is the college, school, or department of the donor's choosing. The donor can specify that the contribution be used in the particular academic area wherever the needs are greatest or specify the contribution for a particular fund — for example, an existing scholarship fund — within the college, school, or department.

The third area is the Kerr Library. Again the contribution will go to wherever the need is greatest unless the donor specifies a particular use.

The fourth area is special projects. This includes such programs as the Rugby Club, Forensics Team, Alumni Band, Honors Program, and the Bernard Malamud Scholarship, to name just a few.

"While donors have always been able to designate their contributions to specific programs," says Haynes, "this is the first year we are specifically asking each donor. We hope this will encourage more alumni who have not contributed in the past to become donors."

"At the same time," Haynes adds, "we hope current donors will want to increase their contributions by supporting a particular area."

The first OSU Fund mailing, sent to all previous donors, went out in mid to late September.

Telefunds begin September 29 and will continue through early December with the student's Super Telefund scheduled for November 10-20. This year, Sharon Magnuson, OSU '85, will direct the on-campus telephone programs. Magnuson was president of the OSU Student Foundation in 1983-84.

Individuals wanting more information about the OSU Fund's new directions can contact either Haynes or Laurie Green, assistant director, at the OSU Fund, Snell Hall 517, Oregon State University, Corvallis, OR 97331, (503) 754-4218.

A Look Back

The Foundation's receipts (revenues) have risen fairly steadily since it was established in 1947, with, of course, a few ups and downs.

For the first fifteen years annual receipts were in the tens of thousands. In 1963, receipts broke the hundred thousand barrier to stay.

The first year the Foundation surpassed $1 million was in 1971, and in the early 1970s receipts were in the $1 to $3 million range. In the late 1970s and early 1980s revenues were in the $5 to $8 million range. The level held steady between $11 and $12 million during the last three years.

In the 15-year period since the Foundation's annual receipts passed $1 million, the organization's assets have grown from $2.3 million to $43.5 million. This last year alone, assets increased $9 million.

Another important milestone occurred this last year when the Foundation's cumulative receipts topped $100,000,000.

Foundation Assets: How The Money Is Used

George Edmonston

This year, the Foundation's expenditures totaled $8,666,026. They covered scholarships and fellowships, faculty development (travel to professional meetings and released time for special projects), research, buildings and equipment, and general university support.

In addition, the expenditures included annuity payments to people who have made life income agreements (a type of deferred gift) with the Foundation, real estate operations handled by the Foundation such as the 1,700-acre J.H. Harris Ranch in Grant County, Oregon, and programs operated by the Foundation's affiliates such as the 4-H Center southwest of Salem that is operated by the Oregon 4-H Club Foundation.

Most of the larger contributions are designated for a specific college or program by the donors and not all monies are expended in the year they are received. In fact, some are never expended because the donors have stipulated the money for an endowment, in which case only interest earned can be used.

Lisa Bronner was one of 14 juniors and seniors who received a DeLoach Work Scholarship this last year.

The DeLoach Work Scholarship endowment was created in the late 1970s by Mr. and Mrs. D. Barton DeLoach. He graduated from OSU in 1927 and she was a member of the class of 1928. Their goal in establishing the scholarships was twofold: to provide financial aid in combination with genuine academic enhancement for the students; and to provide immediate, direct, and substantial assistance for the faculty.

Bronner, a junior in premedicine, was guided in her project by Dr. Karen TimmWood, assistant professor of Veterinary Medicine.

She studied the cells in the lungs of prehatched turkeys looking for special cells, called lipid-filled interstitial cells, similar to those previously reported in mammalian lungs. Not much research has been done on avial lung growth comparable to that which has been done in the mammal.

TimmWood's goal is to develop the bird as a model for mammalian lung growth studies because birds are easier to study. However, similarities between avian and mammalian lung cells must first be shown to exist.

Bronner's efforts demonstrated that the lipid-filled interstitial cells, thought to supply necessary vitamins and minerals during development, are found in turkeys.

"This was a good opportunity for me," says Bronner, "not only for the knowledge gained from the research, but to learn laboratory techniques and how to use laboratory equipment. Everything had to be done under a microscope."

Her studies required that she learn how to use the electron microscope and how to section and stain tissue for electron microscopy.

The culmination of the project, which continued through the summer, will be a publication coauthored by Dr. TimmWood and Ms. Bronner.

Association News

Alumni Distinguished Professor Award

OSU Professor of History William Appleman Williams (right) is congratulated by Robert Frank, acting dean of the College of Liberal Arts and OSU Alumni Association Vice President Dennis Todd (center) as he receives the OSU Alumni Association Distinguished Professor Award during "University Day" activities at the LaSells Stewart Center September 18. The award, given annually since 1965, recognizes outstanding professional achievement through teaching and scholarship and in service to both the university and the community. Dr. Williams came to OSU's history department in 1968, after nearly two decades teaching undergraduate and graduate students at several institutions. He retired in June 1986 following eighteen years of distinguished service to OSU. A nationally recognized American historian, Dr. Williams has produced more than a dozen books, innumerable essays and reviews, and a long list of chapters and commentaries.

Homecoming

(Continued from page 1)

for a large moving van and that's where we'll be."

For the Class of '61, the weekend culminates Saturday evening with a reunion dinner and dance at the Corvallis Country Club.

Homecoming opponent

The Washington Huskies might be a little angry at the Beavers after last year, when OSU shocked Washington, in Seattle, 21-20 in one of Oregon State's biggest upsets of all time. The Beavers were not only 38 point underdogs, they were also belittled by the Seattle media.

The Air Express came out firing as quarterback Rich Gonzales passed for 298 yards and one touchdown, but the biggest play occurred with 1:46 left in the game when Andre Todd crashed through the Washington line, blocked a punt and Lavance Northington recovered the ball in the end zone.

This year, the Huskies again appear to be a national power as they have already demolished Ohio State, 40-7, and BYU, 52-21.

The Beavers have been known to give the powerful Huskies a run for their money. Before last year's victory, OSU gave Washington all they could handle before losing 19-7, before a crowd of 40,000 at Parker Stadium in 1984.

But, other Beaver Homecomings in the past have been more successful. The team from this year's 25-year reunion class, 1960-61, had an outstanding season as they finished 6-3-1 for coach Tommy Prothro.

At that Homecoming, Prothro's Black Bandits tied the Oregon Ducks 14-14 in a combination Civil War/Homecoming game. The Homecoming theme for that year was "New Horizons" and it previewed OSU's success in the 1960s.

Current Alumni Director Wirth was also a senior in 1961. Players Rich Brooks (now the Oregon football coach), Gene Hilliard and Mike Dolby later became Oregon State assistant coaches, and assistant Beaver Club Director and ex-NFL player Aaron Thomas was a starting receiver for Prothro.

"Last year Homecoming went pretty well," commented Wirth. "We had about 100 more people at the Alumni Barbecue. But this year we decided to institute a few changes and try to upgrade Oregon State Homecoming."

From 9:30-5:00 p.m., childcare service will be provided by student members of Lambda Chapter of Omicron Nu, National Home Economics Honor Society, OSU pre-school facility. Full-day and drop-in service will be provided at $2.00 an hour.

Homecoming Schedule

Nov. 7	7-8:00 p.m.	Parade and bonfire
	8:00 p.m.	Class of '61 "no host" social, 2565 NW Pendleton Place, Corvallis
Nov. 8	9:30-5:00 p.m.	Daycare service, OSU pre-school facility
	9:30-11:00 a.m.	Open houses, Schools of Pharmacy and Home Economics
	9:30-11:00 a.m.	Campus tours, MU main concourse
	10:00-11:00 a.m.	Mini reunions, MU
	11:00-1:00 p.m.	Alumni Barbecue, McAlexander Fieldhouse
	1:30 p.m.	OSU vs. Washington, Parker Stadium
	4:30 p.m. (approx.)	Class of '61 tailgater
	4:30 p.m. (approx.)	Doughnut Jamboree, McAlexander Fieldhouse
	6:30 p.m.	Class of '61 reunion social, dinner and dance

Alumni Insurance Offers Lower Premium Rates

The Oregon State University Alumni Association term life insurance program will offer improved benefits this year, according to Don Wirth, OSU Alumni director. Lower premium rates will be available in most cases, especially for non-smokers with higher amounts of coverage, plus an opportunity for automatic increases in amounts of coverage over a ten-year period.

The program gives alumni a convenient way to buy initial or supplemental insurance coverage at group rates. "Younger alumni can start their insurance portfolios through us in coverage amounts from $25,000 to $300,000," said Wirth. "Alumni who already have insurance can use our program to supplement their coverage and make up for inflation."

"This is 'no fuss' insurance. It's all done through the mail, so it doesn't take much time and you avoid the possible pressures of receiving a sales visit. It offers outstanding protection for the money. And it's underwritten by New York Life Insurance Company."

Spouses, as well as adult children, can apply for coverage even if the alumnus does not. Younger children of the insured are eligible for insurance in lower amounts of $10,000 or $5,000.

"We're offering this special service by arrangement with one of the nation's most respected providers of alumni insurance programs," said Wirth. "We're looking forward to increased growth this year."

Details and application forms for the program will be mailed to alumni this fall, but any alumnus who does not receive the materials may request them from the Alumni Office by returning the coupon below.

YES, I want to learn more about our Alumni Term Life Insurance Program

Name _____

Address _____

_____

Zip _____

"Before The Play By Play"

A Lecture Series Sponsored by the Oregon State Alumni Association

Oct. 25
"Gene Research at OSU"

Nov. 22
"The Domestic Roots of Soviet Foreign Policy"

LaSells Stewart Center, OSU
11:30 a.m.
Admission: $6.00 — includes lunch

Golden Jubilee Weekend

June, 1986

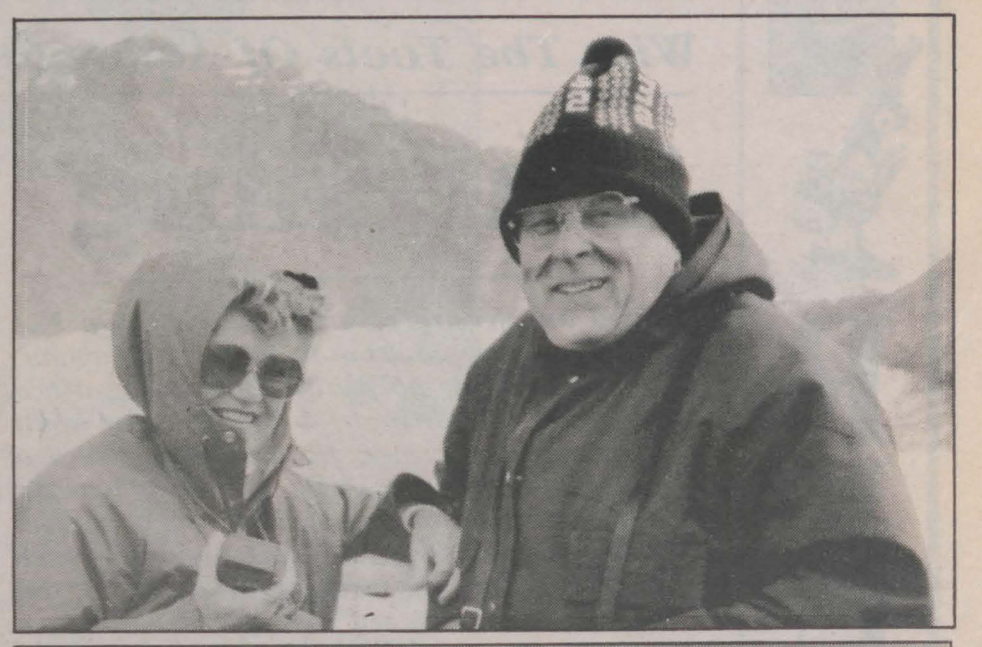
Photo Gallery

Old friends and classmates Phil Brandt and Colleen and Willard Booth share old times at the Class of '36 50th Reunion.

A reunion of the Class of '36 Mortar Board: *left to right:* Janet Willard Buxton, Charlotte Redfield Welsh, Helen Maarenne Lee and Jean Ross Graham.

The oldest Golden Jubilee graduate, Lillie Currin Happold '08, chats with OSU President John Byrne and Alumni Director Don Wirth.

Alumni Travel



Several hundred Oregon Staters, in two separate groups, traveled to Alaska and the Danube River this summer with tours sponsored by the OSU Alumni Association. The Danube Tour was a delightful trip down eastern Europe's most famous river, with stopovers in Vienna and Istanbul. The Alaska cruise included 7 days and nights aboard the luxury liner **Nieuw Amsterdam**, with visits to Vancouver, B.C., Ketchikan, Juneau, Glacier Bay and Sitka. In the top photo, Oregon Stater Ray Puckett ('44) of Roseburg, Or., pauses for a photograph with a Romanian worker. Below, Les ('50) and Marylou ('49) Green of Salem have their picture taken as Glacier Bay slides by in the distance. Les is a former alumni association board member.

OSU Alumni Association Schedule

July 8	Alumni Picnic	Lake Oswego
July 10	Alumni Picnic	Seattle
July 22	Alumni Picnic	Corvallis
July 24	Alumni Picnic	Eugene
July 29	Alumni Picnic	Salem
August 22	Young Alumni Gathering	Portland
August 24	Past Presidents Dinner	Corvallis
August 24	Bay Area Club Picnic	Palo Alto, CA
September 4-13	Alaska Cruise (EXPO-Vancouver)	Alaska
September 10	Executive Committee Meeting	Salem
September 13	Fresno State Football Gathering	Fresno, CA
September 20	Michigan Football Gathering	Ann Arbor, MI
September 26-27	Fall Term Board Meeting	Corvallis
September 27	'46 Class Reunion, Corvallis	
September 27	Alumni Seminar — College of Business	Corvallis
October 4	Washington State Football Gathering	Pullman, WA
October 4-5	Alumni Family Weekend	Newport, OR
October 11	California Football Gathering	Berkeley, CA
October 18	Arizona Football Gathering	Tucson, AZ
October 22	Executive Committee Meeting	Salem
October 24-25	'56, '66 & '76 Reunions (Boise State)	Corvallis
October 25	Alumni Seminar — College of Science	Corvallis
Oct. 28-Nov. 22	South America Tour	South America
November 1	UCLA Football Gathering	Portland
November 8	Homecoming '61 Class Reunion (U of W)	Corvallis
November 15	Brigham Young Football Gathering	Provo, UT
November 22	Alumni Seminar — College of Lib. Arts	Corvallis
November 29	UTEP Basketball Gathering	El Paso, TX
December 3	Executive Committee Meeting	Salem
December 26	Far West Classic Gathering	Portland

RESEARCH

The Problem Is Hunger—
With The Tools Of Aquaculture, OSU Researchers Are...

Searching For A Simple So

Tired and frustrated, a young Jamaican reef fisherman emerges from the blue-green lagoon. He walks slowly up the beach, carrying a few small fish on a stringer, the very meager result of a long day's work. He steps quietly past a couple of slightly overweight, sunburned tourists, and returns to the small village where he lives with a growing family. To make the meal stretch further, he will use his catch in a watery "fish soup," and try to sell a couple of them to a neighbor for a few cents. The coins will feature no esoteric slogan like "E Pluribus Unum," but rather the more fundamental, pointed message of the Jamaican penny— "We Must Produce More Food."

By
David Stauth
OSU Department of Information

It's a common scene in the Third World, and in many areas it's getting worse.

The people may be burdened by overpopulation, poor management of local resources, political upheavals, clumsy bureaucrats, eroding soils or eroding cultures. Their struggle is too-often marked by poverty, hunger, disease and illiteracy, by tractors with no spare parts, monsoons that don't come, foreign aid programs that provide electricity to people who can't afford a refrigerator.

With those challenges to confront, a young group of alumni from Oregon State University are working on an unusual program in an unusual place, to improve food resources for island or coastal cultures across three oceans. Under the auspices of the Caribbean Marine Research Laboratory on a small island in the Bahamas, they're trying to develop some promising new aquaculture techniques on the scale they believe will work best— the small scale.

"We are necessarily trying to keep this program very low tech, not high tech," said Bori Olla, a scientist for the National Marine Fisheries Service, professor in the OSU college of oceanography and chief science advisor for the Bahamas aquaculture program. "It can be a real mistake to make things too elaborate and complicated. What we're trying to achieve here is an aquaculture system that is small, simple to establish, cheap and can help supply badly-needed protein in many areas. One that can be operated easily by native entrepeneurs when we leave."

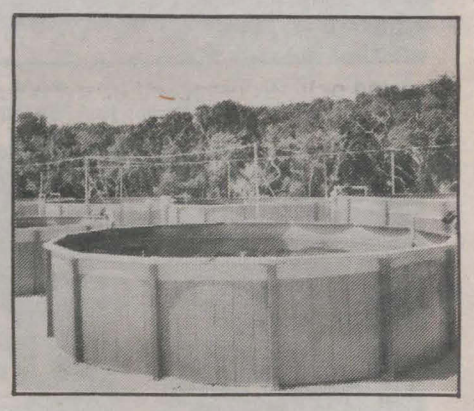
The problem, Olla says, is the multitude of small and large islands and coastal areas in the Third World that have overfished their near-in reefs and shores. Once-productive fishing grounds, which are part of a cultural heritage and critical to the local food supply, simply have been depleted. The result can be hunger, malnutrition or starvation.

The plan, he says, is to cultivate in small, plastic-mesh saltwater cages an ordinary whitefish that is native to Africa. The fish, tilapia, is tasty, adaptable and easy to feed, grows rapidly on a simple diet and would be well accepted by native cultures that are historically dependent on fishery resources for food.

The place for this research is Lee Stocking Island— a quiet, pristine island about 200 miles south of Nassau in the Bahamas. It's owned, and the research is partly supported, by the private Perry Foundation, which funds several types of oceanographic research.

And the program, Olla says, is going very well. With support from the Perry Foundation and the National Oceanic and Atmospheric Administration, the results so far are encouraging. By January, 1987, a program will begin in Haiti to train local fishermen in these techniques and begin actual production of tilapia for consumption.

"A one cubic meter cage can grow 300 pounds of fish in six months," said Bob Wicklund, director of the research center. "It may be 2-3 years in Haiti before we have their program self-sufficient, but that's the goal. We'll take it slow and find natives to operate the system in the long run. The first efforts will just be to show them what can be done, and then how to do it."



Fish tanks

"As a biologist with an interest in marine biology and aquaculture, it was a wonderful opportunity, too good to pass up. I'm learning a lot of new skills... and can look out my window at the bluest water you've ever seen. We read a lot, do some diving, a little fishing. We keep things simple."

—Lisa Ellingson

Re

lution

"We're very optimistic that our concept will work, because it is simple— we are not concerned about creating a new fishery export for a cash crop. We're just concerned with improving the native diet, and we think we can do that."

—Bori Olla

Small tanks can be used to grow large volumes of fish.

According to Olla, this is among the first efforts in saltwater aquaculture to cultivate a simple food fish for local consumption, rather than a more exotic species, such as shrimp, for sale or export. It is not as complex or sophisticated as some of the more advanced aquaculture programs elsewhere in the world, such as Taiwan, Japan or Israel. But the long-term strength of the concept, Olla says, is this simplicity—let a village have its own fish cages, using simple imported grain or local agricultural bi-products, and produce high quality protein in a reasonably short time.

"For the fish food, we'll start out using pellets composed of soy beans and other grains and some fish meal," Olla said. "But the goal is to find a local product, such as parts of the rice stalk that are now being wasted, and feed that to the fish," Olla said. "People in Haiti or the South Pacific won't eat soy beans or rice stalks. They will eat fish."

Research in the Bahamas is nearing fruition, answering questions about which fish species do best in saltwater and what growth rates can be expected. Tanks are being readied to produce the millions of small "fry" that will later be grown into adult fish at locations around the Caribbean. And studies are showing that the tilapia do quite well on a simple diet of algae and zooplankton nourished by chicken manure.

Conducting this research is a young and energetic group of OSU alumni and graduate students from various disciplines. They include Doug Ernst, a 1984 graduate with a masters degree in agricultural engineering; Steve Phillips, a masters candidate in fisheries science; Lisa Ellingson, a 1985 graduate in biology; Margaret O'Brien, a masters candidate in oceanography; and Wade Watanabe, who has a bachelors degree in fish and wildlife from OSU and a doctorate from the University of Hawaii.

"We didn't need to go beyond OSU for most of our people, because the expertise we wanted was right here," Olla said. "Besides, it gives them a common bond. They can sit around and reminisce about the mountains, rain and fog, none of which they have in the Bahamas."

Life on the island is comfortable, but simple. Cabins are small, entertainment is usually an evening of sailboarding or snorkeling, and the nearest commercial airline is 12 miles by boat, then 30 miles on a rutted coral road. The sole luxury is a real, functioning telephone.

This program is only one of many OSU ventures in aquaculture, Olla said, and, despite its $500,000 annual funding, it's very small compared to some of the massive programs in international agriculture. It is not designed for major national projects, he said, just a village-by-village development.

"We're very optimistic that our concept will work, because it is simple," Olla said. "We're not concerned about people that can take their boats out 100 miles to sea and fish, because that's not the problem. We're not concerned about creating a new fishery export for a cash crop. We're just concerned with improving the native diet, and we think we can do that."

search, Snorkeling, Sunsets And Solitude

Each evening about 7 p.m., a two-foot iguana lizard strolls by to pick up leftover table scraps. Wind surfing and snorkeling are the primary entertainment, and the weather is so nice it's monotonous— until an occasional hurricane blows through.

For Lisa Ellingson, 24, it's a definite change of pace. In June, 1985, she was graduating from OSU with a degree in biology. A month later, she was working 10-hour days on an isolated island in the Bahamas, struggling with mosquitos, diving for conch, making friends with the natives and getting hands-on experience in important aquaculture research.

"As a biologist with an interest in marine biology and aquaculture, it was a wonderful opportunity, too good to pass up," Ellingson said. "I'm learning a lot of new skills that you don't get much of in school, and can look out my window at the bluest water you've ever seen. We read a lot, do some diving, a little fishing. We keep things simple."

Ellingson is excited about the potential of the research and its possible uses in alleviating Third World hunger. The small cage, saltwater techniques to raise simple food fish "could be an important and sustainable part of ordinary family life," she said, if people had the knowledge and basic skills.

In a normal work day, Ellingson and her colleagues may stock fish, monitor water chemistry, feed, grade or harvest fish, record weather information, or help interpret data. In the evening, she takes a short trail from her small trailer to the beach to watch the consistently beautiful sunsets. On a day off, she might explore one of the nearby islands. And in tropical storm season, she pitches in as necessary.

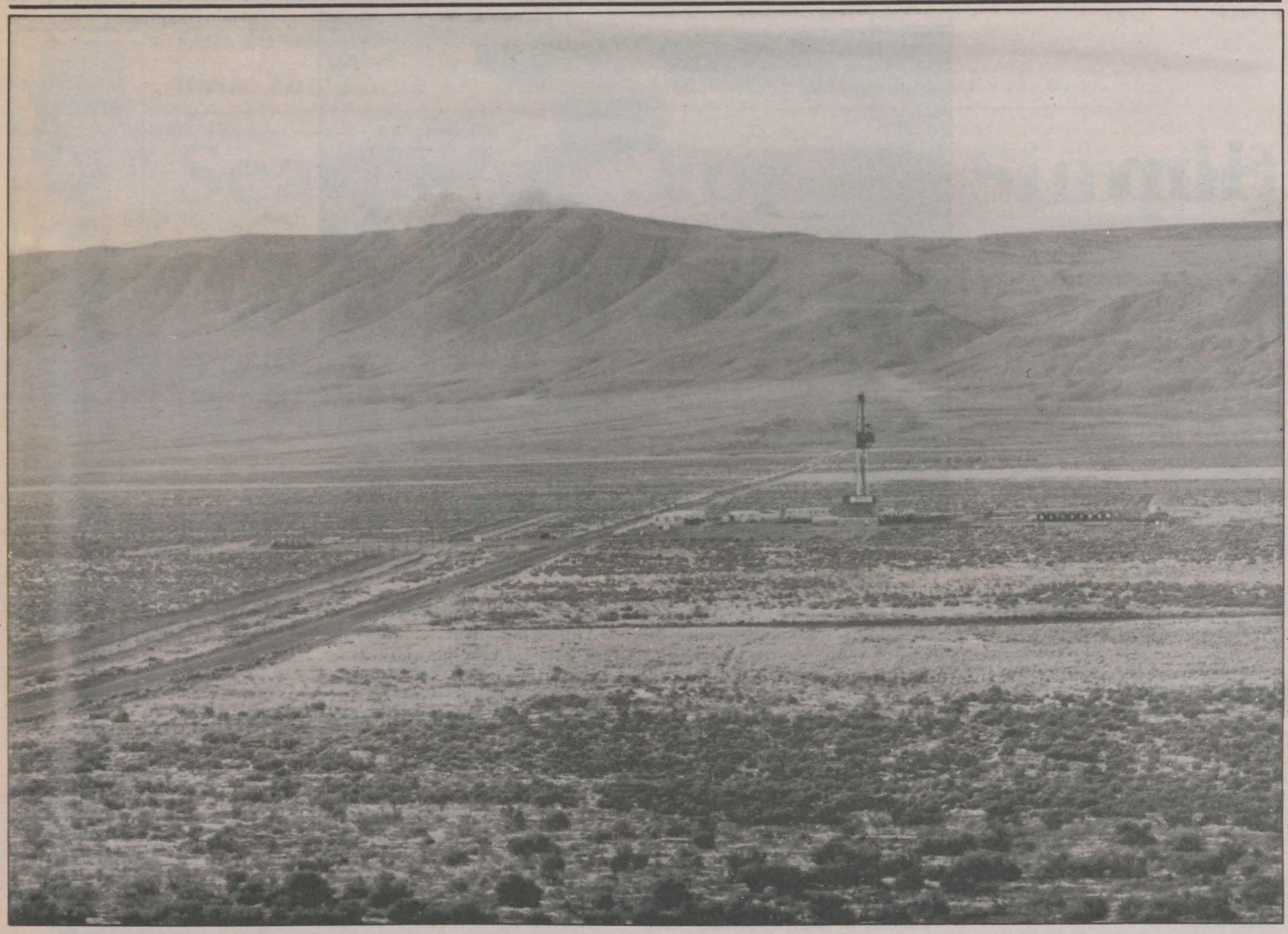
"Both hurricanes Gloria and Kate came near us in 1985, and sometimes you're busy all day putting up plywood," Ellingson said. "We saw Gloria coming, but hurricane Kate snuck up on us. Even though it only came within 100 miles, we had 60 mile per hour winds. It was the only time since I've been here that I had to wear socks and shoes."

"Hurricane Kate snuck up on us. Even though it only came within 100 miles, we had 60 mile per hour winds, and it was the only time since I've been here that I had to wear socks and shoes."

Beyond the natural traumas, Ellingson said, is also the normal stress of working constantly in close quarters with eight other people. Everyone tries hard to get along and cooperate instead of "butt heads," she said, because "there's no running away from anything. . . whatever argument you start you have to finish."

One highlight of the year so far, she said, was the brief visit of the Delta, a 2-man submersible, as part of a U.S. research effort. Ellingson took a short ride 580 feet beneath the sea to survey a submarine cliff, and others in her group saw a turtle swimming more than 500 feet deep.

"I'm not sure where I'll end up after this," Ellingson said. "I'd like to stay in the Northwest if I can find work, but that may not be easy. If possible I'd like to continue working with aquaculture. There's a lot that can be done with this technology, and I enjoy it."



Courtesy of Rockwell Hanford Operations PNL Photograph

Situated near the center of the 570-square-mile Hanford nuclear reservation, one of the world's largest drilling rigs towers 17 stories above ground and will drill to depths nearing 4,000 feet. The deep shafts will allow large-scale hydraulic stress tests for determining whether water flows through the basalt layers underlying Hanford, and whether that water, if it were contaminated with radionuclides, would reach the Columbia River, some 5 miles away.

The massive Hanford site, with a total area larger than that of New York City or Los Angeles, is the career destination of many OSU alumni from a diverse array of disciplines — nuclear engineering, geology, geography, mathematics, physics. Several are directly involved in the process that will determine whether Hanford will become home for 770,000 tons of high-level radioactive waste generated at civilian nuclear power facilities nationwide.

Not In My Back Yard

By Cheryl McLean

Photographs by Tom Brennan

On May 28, President Reagan announced that the Hanford nuclear reservation in eastern Washington was among three finalists to be considered for the siting of a permanent repository for the nation's nuclear waste. Just one step in the long and detailed process that began in the mid-1970s to find a solution to the nation's critical problem of radioactive waste, the President's announcement evoked increased public furor in a growing national controversy. It is an issue couched in politics and emotions, an issue that affects everyone in the Northwest. But amid the explosion of media attention and political disputes, Oregon State University faculty and alumni are quietly but steadfastly pursuing answers to the essential questions of science that must be solved before any final decisions can be made.

Without doubt, it's an emotional issue. The thought of radioactivity in the air we breath, the water we drink, strikes fear into the heart and conjures images of people who glow in the dark, misshapen creatures, giant insects or vegetables, an earth that looks more like the moon than a living planet.

And it's no wonder. Our first grim encounter came as bombs fell on Hiroshima and Nagasaki. The world was shocked by the immense, destructive power created by human hands.

In the wake of Russia's terrible and far-reaching accident at Chernobyl, nuclear energy is experiencing its darkest days in terms of public acceptance and approval. And when the search began for a suitable waste repository site, a cry rang out from every corner of the nation — "Not in my back yard."

That cry was heard so loudly in the Northeast that the search for secondary sites, generally considered destined for the east, was postponed "indefinitely" while money and energy were concentrated on selection of a primary site from among the three finalists.

Thus the issue entered the political arena amid charges that Hanford was chosen because the Northwest wields little political clout. Washington's Gov. Booth Gardner leveled the charge, citing that 85 percent of the nation's radioactive waste is produced in the east, yet all three areas under final consideration lie west of the Mississippi.

Emotional and political concerns may be the most immediately apparent in the current debate, but scientists and engineers, many of whom are from Oregon State University, will be probing the essential questions of science that must be answered before any decisions can be made. Several OSU alumni and faculty are part of a $1 billion, five-year research effort to examine the Hanford site characteristics and establish a body of scientific data that will help determine whether burying the 770,000 tons of high-level radioactive waste in the basalt underlying Hanford will be a safe and effective means of disposal.

"There are detailed technical questions about how to pursue this study that need to be answered, and they need to be answered in a credible, scientific manner," says Steven Baker, a three-time alumnus and head of the hydrology group of the Basalt Waste Isolation Project (BWIP) at Rockwell Hanford Operations. "I think it's very important to have university people such as the ones at Oregon State involved. They help assure the credibility of the product we produce."

Rockwell, the operations contractor at Hanford, is the prime contractor to the federal Department of Energy to conduct the site investigation at Hanford. Vice president and general manager of Rockwell's Hanford operations is Paul Lorenzini, OSU's first nuclear engineering Ph.D. recipient, class of '70. "The purpose of the Basalt Waste Isolation Project," says Lorenzini, "is to evaluate the basalts that lie beneath the Hanford site, and based on the data we collect and the assessments we do, provide the Department of Energy with information to make the decision of whether this is a suitable place to locate the repository."

The BWIP is one part of the national search for a repository. The Nuclear Waste Policy Act of 1982 established a detailed process and schedule for the development of two disposal sites, which required investigation of several geological formations. The other two finalists for the first repository are in Yucca Mountain, Nev., which rests on a formation of volcanic tuff, and Deaf Smith County, Texas, which lies above bedded rock salt. The second repository will most likely be in a granite formation.

The geologic formation being examined at Hanford consists of some 50 layers of flood basalt reaching 16,000 feet beneath the surface and formed between 6 and 17 million years ago when lava spewed from long linear fractures in the earth's surface.

Funds for the nearly $1 billion to be spent at each of the primary sites comes from a fee assessed on utilities that generate electricity at civilian nuclear reactors. The utilities then have a guarantee that the government will begin accepting spent fuel for permanent disposal in 1998.

With a Rockwell staff of more than 500 geologists, hydrologists, engineers, geochemists, and technicians, plus nearly 100 private contractors and consultants, the BWIP is required to understand the character of the basalt, how tectonic forces have affected it and how they might change its character in the next 10,000 years, how the radionuclides interact with the rock or water, or how climatic changes might affect the site.

But the key issue that has Northwest residents most concerned is groundwater — whether the radioactive material will contaminate the Columbia River, just five miles away from the prospective site. It's with this question that OSU people are making their greatest contribution.

"Even though the science you have to do to answer these questions might get very complex, the idea of water flowing through the rocks, picking up waste, and transporting it, is a fairly simple one," says Baker.

"For example," Baker explains, "if so much is released from the canisters because of corrosion or accidents or something, how much of that would be transported to the accessible environment? We're gathering the basic scientific knowledge that we need to have before we can, with confidence, make predictions."

Working under contract with Baker in the hydrology studies are three OSU faculty members, Bob Hudspeth and Bill McDougal from civil engineering, and Ron Guenther, mathematics. They have been involved for the past three years, initially through NORCUS, the Northwest College and University System, headed by Brian Valett, Ph.D. '69. NORCUS is part of the Tri-Cities Universitites Center, which offers degree programs from Oregon State and other universities in the Northwest. Jerome Finnigan, Ph.D. '59, is dean of the program. Valett and Finnigan see the involvement of OSU faculty and graduate students as essential to bringing outside perspective and academic credibility to BWIP and other projects at Hanford.

Specifically, McDougal, Guenther, and Hudspeth are lending support in three areas of the site characterization effort: determining the hydrologic properties of the basalts as they exist now, aiding with the instrumentation used to measure these properties, and developing mathematical systems for analyzing data from a site 3,000 feet beneath the surface.

"We're more involved with site characterization than evaluation or prediction," says McDougal, also an OSU alumnus, Ph.D. '82. "That's the first step. If the characterization suggests that it is not an acceptable site, then that's where it stops."

Groundwater geologist Allen Agnew, a courtesy professor at Oregon State, identifies the concerns at Hanford. "There are some geologic formations that are better than others, and basalt flows, because the rock is tight, should be better than most. But when it's fractured, as it is at Hanford, its rigidity is destroyed."

"We're just borrowing time. We have made nuclear waste. We are continuing to generate it. It's an insidious problem."

Allen Agnew, geologist, courtesy professor, OSU

According to Agnew, the layers of basalt have certain areas between that allow fluids to move horizontally. When a fold occurs, cracks develop, giving the rocks vertical continuity as well as horizontal continuity.

"There's a lot of water up there," adds Guenther, B.A. '59, professor of mathematics at Oregon State. "What we're trying to determine is where the water is going, how fast it is moving, whether there are any upward flows, and whether the basalt layers will act as a sufficient retardant to stop motion up and force motion in a horizontal path."

If the water does move vertically through the basalt, the potential exists for water at depth to reach surface water, which could ultimately reach the Columbia River.

"It's a tough problem," says McDougal. "It's three to four thousand feet down into the rock. Oil companies go deeper; groundwater people are much shallower. It's in an area where not many people have worked and it's different than either above or below. That's part of the reason they called us in to help out."

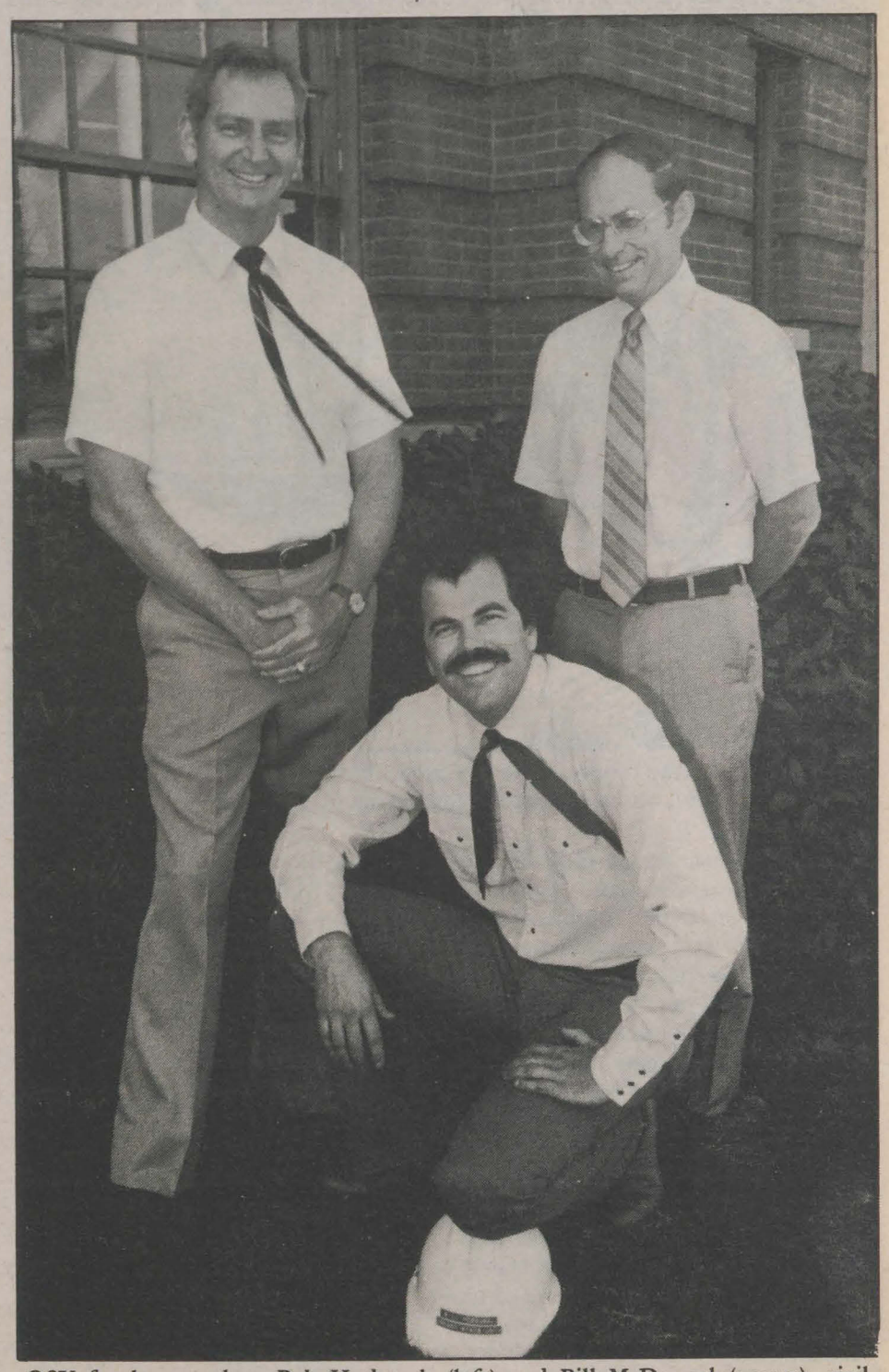
The site characterization involves large-scale hydraulic tests in which water is pumped from one location to another in order to observe its spatial distribution.

"If we pump water from one layer and don't see a response on the layer above it, then that would suggest that the layer is intact and there's not much of a pathway between the two," Baker suggests.

"It's all quite different from typical groundwater modeling because it's three or four thousand feet deep," McDougal explains. "The mathematics are quite a bit more sophisticated, so we're helping with that as well as with the problems associated with the physics being different."

The differences include much higher pressure as well as thermal effects and relatively low permeability. "It's like trying to make water flow through concrete," says Guenther. "In fact, it has all the same types of properties. It's about as porous as concrete, and so on. If you were dealing with this over a small period of time, you would say concrete is a very good retarding medium, not very much goes through it.

(Continued on page 20)



OSU faculty members Bob Hudspeth (left) and Bill McDougal (center), civil engineering, and Ron Guenther, mathematics, are under contract as consultants for the Basalt Waste Isolation Project.

(Continued from page 19)

However, what we're talking about is thousands of years."

The period of time for which scientists must determine the safety of the medium has been set by the EPA at 10,000 years. The Nuclear Regulatory Commission governs the research and waste disposal activities and enforces the regulations, but the EPA established the basic guidelines that must be met.

According to Lorenzini, the intent of these standards is to assure that the waste disposal site would be no more hazardous than a natural uranium ore body. Baker adds that although radionuclides decay at different rates, the total hazard associated with all of the spent fuel decreases through the decay process to something comparable with unmined uranium ore. "After about a thousand years, the sum total of all the materials you're dealing with has a total hazard demand that is comparable to the mined material," says Baker. The 10,000-year figure set by the EPA, then, is fairly conservative, but, Baker explains, "the radionuclides of interest after a thousand years all have very long half-lives, so there's not a lot of difference between 1,000 and 10,000 years."

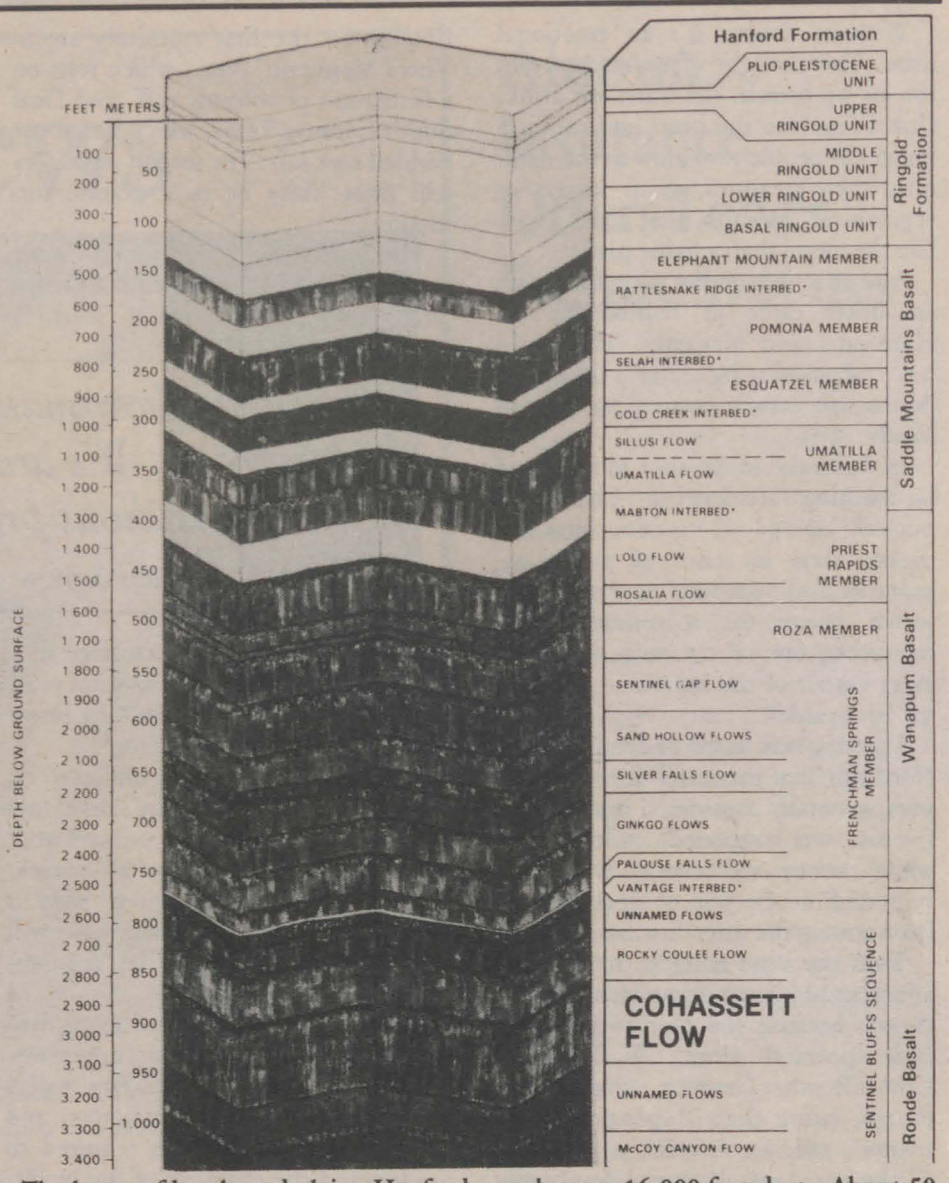
Another aspect of EPA standards for a waste repository site is the acceptable area within which the radionuclides can migrate before the site would be declared unsuitable. The scientific analyses must show that within the 10,000 year period, radionuclides stored in the underground tomb would not migrate more than 5 kilometers (3.1 miles) beyond the repository site, whether in surface water or at depth. If these predictions could not be made with confidence, the site would be declared unsuitable, Baker explains.

Throughout the testing process, Rockwell scientists work with other contractors and with outside groups such as the Yakima Indian nation, the EPA, the U.S. Geological Survey, and other interested parties. According to McDougal, professionals representing these groups meet regularly to critically review one another's work. "A lot of people are looking over our shoulders from a scientific standpoint," he says. Tremendous effort goes into documenting procedures to assure that research and testing are conducted on scientifically sound bases.

"The purpose of the quality assurance program is to be certain that as we collect data and as we conduct the experiments there is a sufficient record to be confident that the data is what we say it is and that the tests were conducted properly," says Lorenzini. "The whole project is being conducted in a glass house, so to speak, and the objective is to conduct it so that everything we collect can be reviewed by many different organizations in the hope that we can develop a consensus on the suitability or nonsuitability of the site as a place for a repository."

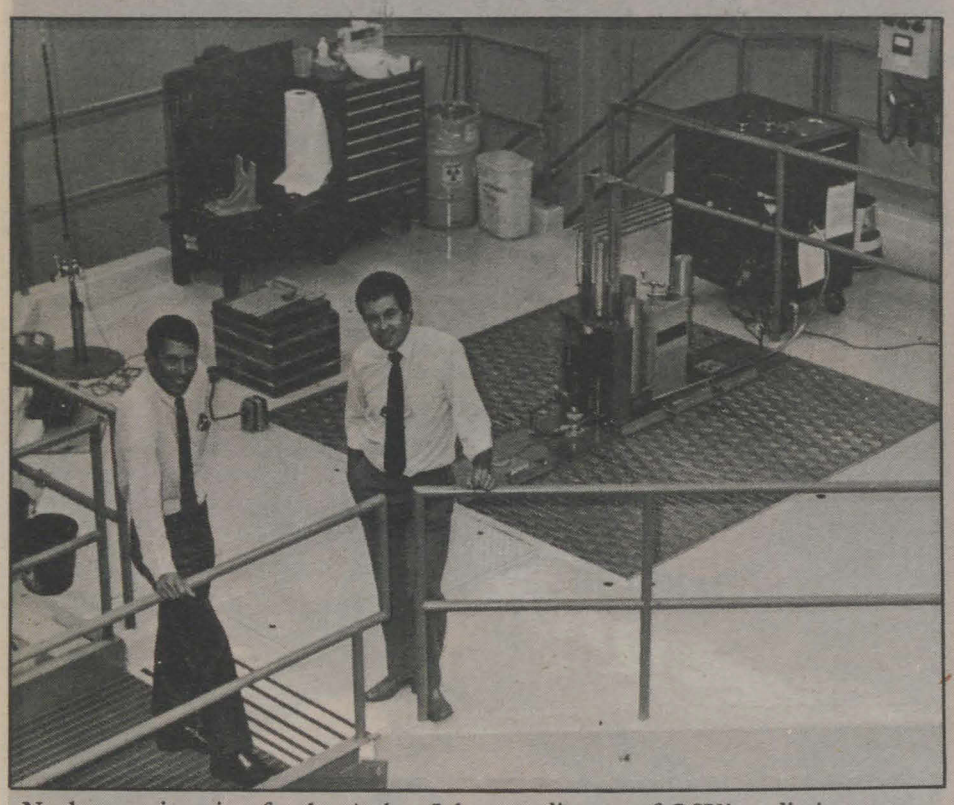
Says McDougal of Rockwell's thoroughness, "They're under extreme scrutiny. They know that if they don't dot the i's and j's on some little item, they'll take a ripping for it. So they want to be very careful about it."

Lorenzini, in particular, knows about



The layers of basalt underlying Hanford stretch some 16,000 feet deep. About 50 individual flows have been identified, and testing is now focused on the Cohasset Flow, at 3,200 feet, believed to be one of the thickest and most uniform of the major flows. (Source: Department of Energy, 1982)

On the Move: Transporting Nuclear Waste



Nuclear engineering faculty Arthur Johnson, director of OSU's radiation center, and Brian Dodd, assistant reactor administrator, stand atop OSU's nuclear reactor.

When the final resting place for the nation's radioactive waste is finally selected, one major problem will remain: the safe transportation of radioactive materials from around the country to the site. One scientist at Oregon State University is directly concerned with this issue.

Brian Dodd, nuclear health physicist and assistant reactor administrator at OSU's radiation center, directs a statewide Oregon Department of Energy program for training emergency personnel to safely handle transportation accidents involving radioactive materials. Called the most progressive of its kinds in the nation, the program has trained more than 800 firefighters, police, and other emergency personnel in the state since its inception three years ago.

When the Oregon State Legislature passed a bill regulating the transportation of radioactive materials through the state, it required permits for each shipment, the cost of which included a provision for training emergency personnel along major highway lines.

The training program has centered in counties along Oregon's major transportation routes: U.S. 97 and Interstates 5 and 84. The goal of the program is to assure swift and appropriate emergency responses in order to minimize damage to people, property, or wildlife.

The Department of Energy then requested his assistance with developing protective action guidelines to be used in the event of transportation accidents involving radioactivity. The U.S. Department of Transportation has guidelines that were useful, says Dodd, but the figures they used were too general and had no scientific validity.

Dodd and a graduate student, Larry Humphries, set about cataloguing the types of radioactive shipments being made through the state, currently some 1,500 annually. With that data, they made calculations to predict the worst-case situation that would arise in the event of an accident for each of 10 types of shipments.

"We can do calculations that show what the concentrations of radioactivity might be at certain points downwind," says Dodd. "If someone stands there for a certain period of time we can calculate how much they might injest and what that might do to certain parts of their body or what the cancer risks might be."

This resulted in the publication of "Hazards Assessment of Worst Case Transportation Accidents Involving Typical Radioactive Materials Shipments." They also developed a protective action guidebook, which suggests appropriate protective measures to be taken based either on information observable at the scene or on the worst-case assumptions for data which is not available.

According to Dodd, radioactive materials accidents account for less than one percent of the total number of accidents involving transportation of hazardous materials. Stringent packaging requirements for radioactive shipments also minimize the hazards.

The research included calculating probabilities for each type of accident as a function of frequency and location and correlating these with projected figures for increased cancer fatalities and other hazards. "In terms of transportation," Dodd concludes, "the greatest fatality risk comes from regular accident effects. The probabilities of someone dying from the crash itself are several orders of magnitude higher than from a resulting radioactive spill."

The figures changed very little with the additional number of shipments that would of necessity come through Oregon should Hanford be selected as the nation's nuclear waste repository. But, says Dodd, "If you look at a map of the U.S., most of the plants are in the eastern part. From a transportation viewpoint it really doesn't make much sense to ship the stuff from the east all the way across the country to put it over here."

Oregon gubernatorial candidate Neil Goldschmidt, former U.S. Secretary of Transportation under the Carter administration, labeled Hanford the "worst possible site" from a transportation perspective. He cited Interstate 84 as notorious among truckers as an accident-prone highway.

"Obviously the further you ship it the greater the risk of an accident, even though the risk is still small," says Dodd, acknowledging that the accident rate along I-84 is relatively high.

Dodd's findings are currently under review by the National Health Physics Society. The U.S. Department of Transportation is also considering publication on a national level. When Dodd travels to Vienna, Austria, this month, he will take a copy to the International Atomic Energy Agency for consideration on an international level.

The next step, for Dodd, will be to encourage expansion of the training program throughout the state and the region. In addition, he is under contract to review the technical design of the shipping casks, part of a national program to upgrade the integrity of the casks for greater protection in the event of accidents.

public scrutiny. He's the one on the hotseat if anything goes wrong, and occasionally, as with recent controversy over the removal of safety signs before Gov. Gardner's visit to Hanford, things do. Asked how he felt about taking the heat for some of his several thousand employees, he responded, "There are other things I'd rather do. I think the recent events were unfortunate, but what is important to us is that we run an open operation. We have a ground rule we try to follow: 'Tell the truth even when it hurts.' Sometimes that means you find yourself on the hotseat when things don't always go the way you want them to."

In reading the newspaper accounts of the process, one senses a general mistrust — of federal agencies, of industrial contractors, of nuclear power utilities. A recent poll published in *The Oregonian* found that 61 percent of Oregonians surveyed believe that there is no safe way to store high-level radioactive waste. Letters to the editor have suggested the fear that "politicians" in Washington, D.C., will build the repository at Hanford because of the Northwest's lack of political clout and regardless of the research results.

But according to Baker, "Unless conclusive scientific evidence is developed and accepted by the scientific community that the site is suitable, then a repository won't be built here. It's the intent of the Nuclear Waste Policy Act, and I believe that's what's going to happen."

"The state and the Indians are very interested in the matter, and I think Congress is. The state (Washington) does have a veto and is very concerned that the decision be made on a scientific basis," says Baker.

Lorenzini is apprehensive that politics and emotions will sway in the other direction: even if the science shows a site is suitable, the politics won't allow it to go forward. "I think if the technology says it's not suitable, we'll be the first ones to come forward and say, don't put it here. What I see is that there are people taking the position that they don't want this to be a repository before we've even done the characterization of the site.

"There isn't anybody out there who's saying, 'Let's make Hanford the site for a repository.' You've got some people who say, 'Let's study Hanford and see if it can be a suitable site,' and there are others who say, 'Let's not even study it.' And it's clear right now that we don't even have enough data to decide one way or the other. So judge for yourself which way politics is driving."

Again we return to the emotional side of the issue, the fear of radioactivity. Alan Robinson, professor and chair of the nuclear engineering department on campus, related these stories.

Around the turn of the century, Thomas Edison, then a proponent of direct current, was leading the campaign against alternating current, calling it the most dangerous form of electricity that one could possibly use. People were electrocuting dogs to show how fatal alternating current could be.

"You look back on that and say, 'What were they thinking about?' says Robinson. "We've got alternating current everywhere and don't think anything of it. But this was one of the most controversial issues of the day, with great-named scientists on both sides, struggling it out, killing dogs to make their point."

Robinson compares the fear of radioactivity with the fear of anything unfamiliar. While working on a contract for the Army involving neutron radiography, a process similar to x-rays which allows you to see through metallic objects, Robinson watched what happened when a group of his research assistants were working inside OSU's nuclear reactor with several Army ballistics experts.

"The Army people were constantly nervous and afraid of the clicking geiger counters around, and my people were afraid of the guns and were constantly watching the Army guys who were cleaning and loading these weapons," he recalls. According to Robinson, it's all a matter of what you're used to.

Will we ever get accustomed to nuclear power?

"Sure, we'll get comfortable with it," Robinson is confident. "We got comfortable with alternating current."

Meanwhile, Oregon State University researchers and alumni will continue to seek safe means of disposing of the nation's nuclear waste. Most believe it is a problem we can't afford to ignore any longer.

"We've all seen the statistics on the news about the interim storage pools getting filled up, and that's a much higher risk," says McDougal.

Geologist Agnew agrees. "We're just borrowing time. We're still storing the stuff in interim storage, and Hanford is only one site. It's more of an immediate problem because it's closer to the surface. The risk from that, I think, is greater than the immediate risk from choosing a poorer geologic site.

"We have made nuclear waste. We are continuing to generate it. And forgetting weapons, forgetting nuclear power, we're generating it in our hospitals. It's an insidious problem and we're creating part of the problem ourselves — as the book says, "Not in my back yard." OSU

> *"Unless conclusive scientific evidence is developed and accepted by the scientific community that the site is suitable, then a repository won't be built there."*
>
> Steven Baker, BS '62, MS '77, PhD '73

Subseabed Disposal: An Alternative

Nicklas Pisias, associate professor of oceanography.

The Nuclear Waste Policy Act, in addition to detailing the process for selecting a land-based repository site, requires that the Department of Energy pursue alternative methods of nuclear waste disposal.

Several researchers at Oregon State University have been involved in the national effort to investigate the only other alternative under consideration: subseabed disposal. Aiming toward a 1989 report to evaluate scientific and engineering feasibility, the subseabed program is still in the research and development phase and has yet been proved a viable alternative. However, nothing in the research has shown otherwise, says Dr. Nicklas Pisias, associate professor of oceanography.

"The subseabed program is an effort to determine whether we can find geologically stable regions of the ocean in which you can bury nuclear waste in the sea floor," says Pisias, who received his master's degree in geological oceanography at Oregon State in 1974. He is one of the principal investigators working through Sandia National Laboratories of Albuquerque, N.M., the government research organization responsible for the entire project.

Subseabed disposal is based on the multiple barriers concept, in which radionuclides are kept from the accessible human environment by a series of artificial and natural barriers. The canister in which the waste is packaged serves as an inital barrier, the deep-sea sediments provide the primary long-term barrier, and the ocean itself is the final long-term barrier.

One method being considered allows elongated cylinders loaded with wastes to free-fall through the ocean, becoming embedded and smothered in the sediments. In theory, even if the canister were to decay and leak the wastes over long periods of time, the radionuclides would adsorb to the sediments and remain there for a sufficient time to render them harmless.

Thus far, researchers have investigated climatic and deep water circulation, biological transport mechanisms, site and sediment characterizations, engineering concerns, and other relevant topics.

Pisias's research has focused on two questions: **How efficient is the sediment below the ocean as a barrier to the transport of nuclear waste?** and **What area of the North Pacific Ocean will provide a geologically stable formation in which to bury the waste?**

The early sediment studies were conducted with Dr. Ross Heath, former dean of oceanography at Oregon State who now holds that post at the University of Washington. The research found that certain kinds of sediments are chemically effective barriers to radionuclide transport. Their high sorption rate meant that most radionuclides would bond with the clays, effectively preventing further movement from the region in the event of canister leakage.

The search for appropriate regions of the ocean floor yielded two potential candidates, one about 2,000 miles north of Hawaii and another several thousand kilometers west of Midway. These sites, says Pisias, have a high degree of geological predictability. "We can demonstrate that they have slow but continuous deposition of sediment over the last 60 million years, and since nothing happened in that time to disturb the deposition, we feel that we can predict the probability of its being disturbed in the future."

Contrary to some initial suggestions, these sites are far from subduction zones, regions that are slowly moving under the continental plates. "Some people thought if you put it in the subduction zone it would go down with the subduction," says Pisias. "The problem is, we don't know where the sediments will go. They may come back up. Subduction zones are geologically active, and if you have faulting in the next million years, you can't predict what will happen."

The program is currently threatened by budget cuts in Congress. In the last fiscal year, the Reagan administration allotted $12 million for subseabed research. But in the current spirit of budget cutting, subseabed support was terminated when the current federal budget was drawn up. If funding is not reinstated before the next fiscal year, the program will be terminated September 30. Oregon State University's share of last year's funding was more than $500,000, which was split among oceanographers Pisias, Jack Dymond, Dale Pillsbury, and William Pearcy. Each has an individual contract for a specific aspect of subseabed research.

What will happen if the research effort does not receive support?

"The program will write its final reports and terminate," says Pisias. "There will be no U.S. effort. The Europeans and the Japanese will continue. England, France, Japan, Canada, and The Netherlands all have active programs."

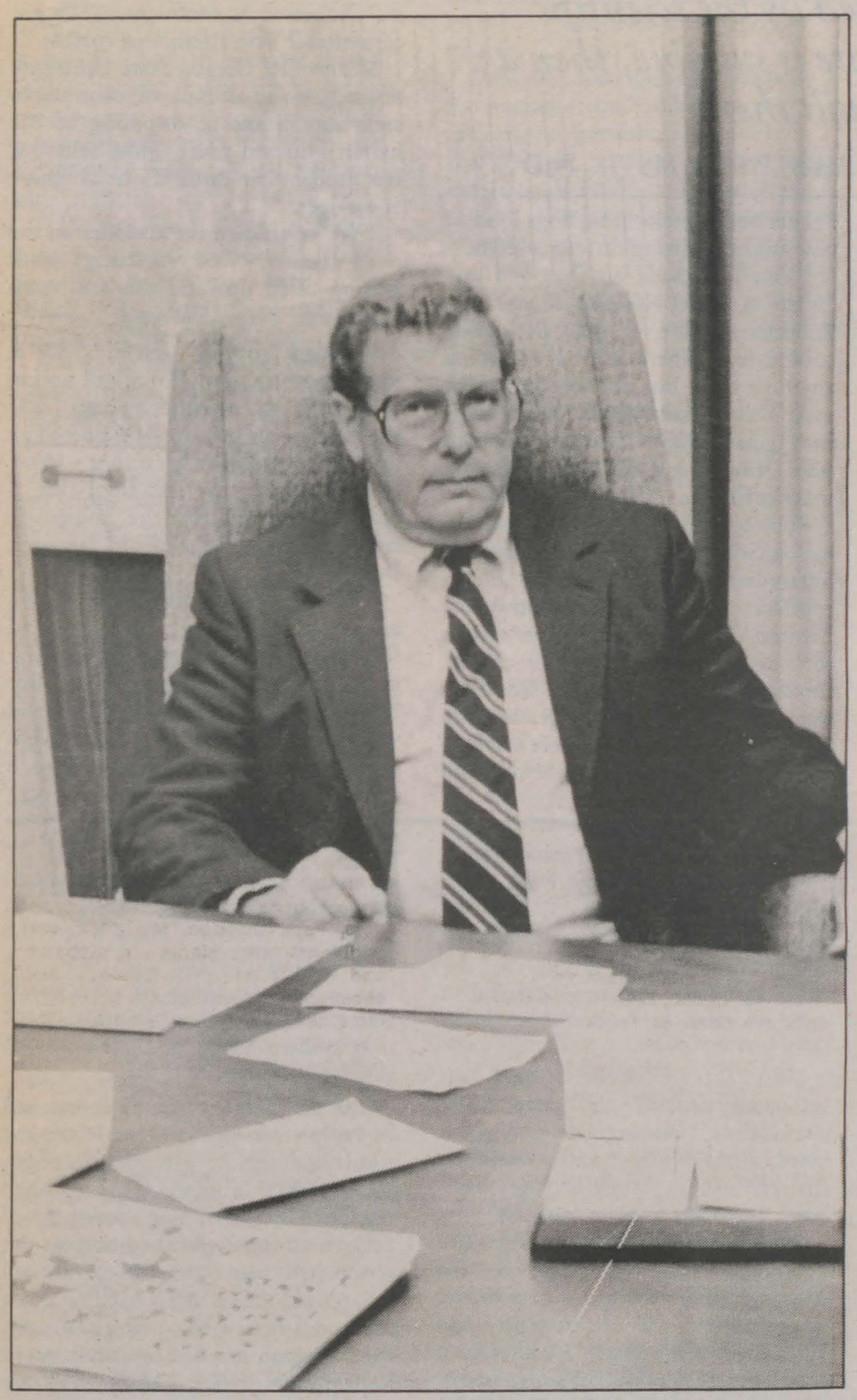
Some of these countries, particularly England and Japan, have no option but to pursue subseabed research. "Where are the British and Japanese going to put it?" asks Pisias. "They don't have Nevada or eastern Washington to throw away. They will continue and we will have no national effort."

For Oregon State University, these grants also meant the ability to obtain much-needed funds for equipment, including a half-million dollar mass spectrometer. "We have three quarters of a million dollars worth of hardware on this campus as a direct result of this program," says Pisias.

OREGON · STATE · UNIVERSITY

COLLEGE of SCIENCE

A Special Report



New Dean Appointed in College of Science

Frederick H. Horne, associate dean of the College of Natural Science at Michigan State University, takes the leadership of the OSU College of Science October 1.

The selection of Horne culminates a national search that began after the resignation of Thomas T. Sugihara in December 1985. W. Lawrence Gates, chairman of the Department of Atmospheric Sciences, has been acting dean of the College of Science since January 1986.

Horne has been associate dean for Research and Graduate Programs in the College of Natural Science at Michigan State University since 1982. He is a professor of chemistry and was associate chairperson of the chemistry department at Michigan State from 1975 to 1982. He joined the Michigan State faculty in 1964. During 1963-64 he was on the chemistry faculty at Stanford University.

Horne earned a bachelor's degree at Harvard, where he was a Harvard National Scholar, and a Ph.D. degree at the University of Kansas, where he was a National Science Foundation fellow. He was also an NSF postdoctoral fellow at Stanford University for one year. He is a theoretical and experimental physical chemist, who has published in the areas of nonequilibrium thermodynamics, statistical mechanics, chemical thermodynamics, membrane transport, thermal diffusion, enzyme kinetics, ion transport in liquids and solids, and materials science.

He has been a visiting scientist at Lawrence Livermore Laboratory and at Odense University in Denmark, as well as a visiting professor at Arya-Mehr University of Technology in Iran. He has been a consultant at Lawrence Livermore Laboratory, Oak Ridge National Laboratory, and Los Alamos Scientific Laboratory.

The College of Science: Some Reflections

by John D. Lattin
Associate Dean

Dr. Frederick H. Horne, Michigan State University, becomes the new dean of the College of Science on 1 October 1986. The arrival of a new dean signals a new beginning. It also provides the opportunity to review the current state of the College.

The very heart of any academic unit is its faculty. We have an unusually capable group of scientists in the College of Science—mature scholars who are determining the frontiers of their fields. In spite of many offers to relocate, a remarkable number have elected to continue their efforts at OSU.

The recruitment of new faculty is crucial to the continued development of any academic unit. The College of Science has recruited over 50 new faculty members since 1981, most of them at the assistant professor level. Almost all disciplines are represented in the appointments. One of the benefits of being in this office is the opportunity to participate in the interview process of these capable young scientists. Admittedly, they seem younger every year, but their qualifications and experience grow ever more impressive. Science is in very good hands at OSU.

Active research programs are under way in each department. In addition, several interdisciplinary efforts are worthy of note. For example, cell and molecular biologists in several departments in the College of Science and other academic units are doing important work in molecular genetics. The potential for the application of this research is enormous. Physicists, chemists and mathematicians are cooperating with faculty in Engineering, Forestry and other units in the field of materials science. They study the structural and electronic properties of polymers, alloys, metals, and ceramics to develop new materials that are needed in this age of advanced technology.

Faculty achievement is measured in many ways. Involvement in the international scientific community, the ability to compete successfully for research funds, and the recognition by one's students are just a few criteria.

Our faculty members cooperate with scientists abroad in many research areas—from the study of atmospheric phenomena to that of biological control, environmental health, fish diseases, molecular genetics, nuclear physics, paleontology, and other fields.

Another measure of faculty quality is the ability to compete for research dollars. Peer review of research proposals is the rule, and competition for such funds at the national level is intense. Although the absolute number of Science faculty has declined slightly in the past few years, the amount of research dollars obtained by the faculty has continued to increase and now approaches ten million dollars per year.

Faculty members in the College of Science are responsible for almost one-third of all the student credit hours taught on the OSU campus. Excellence in teaching is fostered and recognized. As former students of the College of Science, you have helped us to identify those outstanding teachers who are honored with the Loyd Carter Award each fall.

We believe it is imperative that our faculty be involved personally in research. Vigorous research programs exert a vital influence on undergraduate and graduate instruction. A teacher who is active in the laboratory can bring results and first-hand experience to the classroom. The laboratory is a very special place to scientist and student alike. It is there that students learn to do science.

A recent report by the National Science Foundation showed that OSU ranked 59th out of the top 300 institutions in the nation in number of baccalaureate students who later earned doctorates in science and engineering. This ranking is far above that of any other institution in the state. The figures suggest that undergraduate instruction in science is very sound at OSU. Alumni responses to our recent inquiries strengthen our faith in OSU science.

Our faculty have received international, national and University awards. We have recipients of the Alexander von Humbolt award, Fulbright award, Alfred P. Sloan fellowship, Camille and Henry Dreyfus award, OSU Alumni Association Distinguished Professor award, the Raymond C. Moore Medal for Excellence in Paleontology, and many others. The Oregon State Board of Higher Education created a new Faculty Excellence award in 1985. College of Science faculty won two of the four awards given at OSU in the first year and three of the seven awarded last year.

The College of Science has recently established two research awards to honor its own: the Milton Harris Award in Basic Research, made possible by the generosity of science alumnus Milton Harris, and the F. A. Gilfillan Memorial Award, created by the family and friends of former dean emeritus Gilfillan. Seven of our most distinguished scientists have received these recognitions since 1984.

We continue to seek quality students because science is a demanding discipline. Although we give over 50 scholarships a year to outstanding students in science, we need increased numbers of scholarships to attract and retain capable students. Every year the selection of scholarship winners becomes more difficult. The problem is not the lack of superior applicants but the lack of funds to reward all qualified students.

The College of Science is a productive academic unit with an excellent faculty and student body in a major research university; however, we are not without concerns. The cost of doing science continues to grow, and we are short of funds for instructional equipment and supplies, including maintenance. Funds for travel and seminar speakers are also needed to keep abreast of scientific developments. We appreciate your interest and continued support. We will keep you informed of the progress of the College of Science in the months ahead.

Special Report

Left to right: W. Lawrence Gates, acting dean of the College of Science, Mrs. Johnson, W. Curtis Johnson, Jr., and Christopher K. Mathews, chairman of the Department of Biochemistry and Biophysics, at the Harris Award ceremony.

Johnson Wins Harris Research Award

W. Curtis Johnson, Jr., professor of biochemistry and biophysics, won the College of Science's 1986 Milton Harris Award in Basic Research for his pioneering work in the application of vacuum ultraviolet spectroscopy techniques to the understanding of molecular structures.

The Harris Award, which is made possible through the generosity of OSU alumnus Milton Harris, consists of a plaque and an award of $1,000. Acting Dean of the College of Science W. Lawrence Gates presented the award to Dr. Johnson on 4 June 1986 at a special gathering of colleagues, students, and friends.

Dr. Johnson joined the OSU Department of Biochemistry and Biophysics in 1968. He received his undergraduate education at Yale University, and he earned a Ph.D. degree in physical chemistry at the University of Washington. In 1966-68 he was a National Science Foundation Postdoctoral Fellow in physical chemistry at the University of California at Berkeley. In 1974 he received a five-year Public Health Service Career Development Award.

Dr. Johnson uses the electronic properties of biopolymers to study the structure of biologically interesting molecules. He has developed special instrumentation and innovative techniques to help understand how the three-dimensional shape of a biological molecule affects its function in living organisms. Dr. Johnson's work has earned the respect of leading scientists in structural biology and molecular biophysics. In the words of a colleague, "he exemplifies the best research at the interface of physics, chemistry, and biology."

Alumni: A Link to Prospective Students

The hundreds of men and women who graduate every year in Science at OSU become the College of Science's best representatives outside the University. As a group, you now number in the thousands. Individually, each one of you is a good-will ambassador for the University. Whether you are now a high school science teacher, a chemist, a physician, a college professor, or a dentist, you are in the best position to be a spokesperson for Science at Oregon State University.

We are recruiting students interested in science, and we need your help. As a former student in the College of Science, you have first-hand knowledge of what it is really like to attend OSU and major in Science. You know what it means to take general chemistry, physics, biology, or mathematics courses, and how it is to be in a small, advanced class, where the limits of the field may be explored. You have been in laboratory sessions where involved exercises were the rule and in classes where substantial term papers on a specialized topic were due. You know best how you managed to fit all these assignments into university life.

We ask you to remember OSU, and the College of Science in particular, whenever you come in contact with college-bound young (and not-so-young) students or their parents and relatives. Have them contact us, and we will do the rest. Remember—Oregon State University is a good place to study science. It was when you were here, and it still is.

All Sciences Day

Saturday, 25 October, will be All Sciences Day at OSU. There will be food, fun, and football (Boise State). The Colleges of Science, Agricultural Sciences, Home Economics, and Veterinary Medicine combine their efforts on this day to welcome prospective students to the campus. There will be tours and open houses from 9:30 to 11:30 a.m.

If you are on campus on that morning before the game, you might like to visit some of the open houses.

George R. Ferguson

(Entomology, B.S. 1936, M.S. 1939)

George Ferguson, a College of Science graduate, first became interested in bees and wasps in the thirties when he took a course on beekeeping from the late OSU entomology professor Herman Scullen. While his interest in insects led to advanced degrees in entomology and work in the field of insect control, his keen curiosity about wasps became a life-long avocation that took up most of his spare time. The result was a substantial collection of wasps (more than 80,000 specimens) gathered all over the world, which he generously donated to the OSU Department of Entomology.

Although Ferguson moved away from OSU in 1943 to pursue what turned out to be a career in the corporate world, he returned to OSU some thirty years later, after retirement, to resume the systematic study of wasps. He has dedicated the last 13 years to organizing and classifying a portion of the large insect collection in the Systematic Entomology Laboratory (Department of Entomology, College of Science). In addition to donating his own large collection, he has donated all of his time during this period.

"I have done what I love to do. It is a privilege for me to be able to work in this laboratory," he says modestly. It should be mentioned at this point that the Systematic Entomology Laboratory with its 2.5 million specimens is one of the largest in the west, ranking among the top 15 in North America (out of 586 such collections). Specimens constitute an important resource for study and are loaned out to scientists all over the country and abroad.

Ferguson left OSU after receiving a master's degree in entomology to continue his studies at Ohio State University, where he earned a doctoral degree in entomology.

"I decided to specialize in the chemical control of insects," he notes, "because that's where the jobs were." Although he returned to the OSU Agricultural Experiment Station as assistant entomologist in 1941, he was to leave again in 1943. His major professor had recommended him for a research position on a special project at the University of New Hampshire that was financed by Swiss-owned Geigy Corporation.

"Being young and adventurous," says Ferguson, "I accepted the offer at the University of New Hampshire—a one-year postdoctoral appointment—because it involved a "secret" compound and promised to be a challenging project."

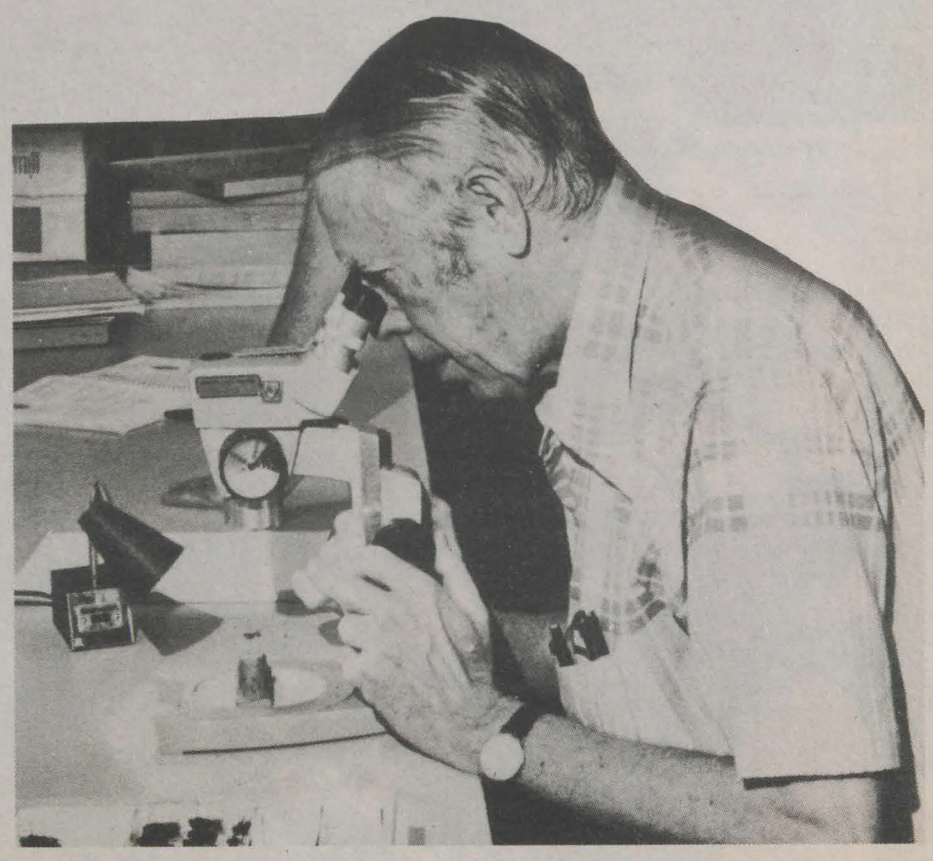
The secret compound, which had been smuggled out of Switzerland by Geigy Corporation during World War II, turned out to be DDT. That substance would have enormous impact toward the end of the war, when it was still strictly controlled by the military, and after the war, when it was finally released for general use. During the war, DDT was used successfully for lice control to eliminate typhus epidemics in Southern Europe and to control mosquitoes and malaria in the South Pacific. After the war, it proved of great benefit in agriculture.

Ferguson's career and success from the time he moved to the University of New Hampshire were inextricably tied to the development, testing, and production of DDT. He was soon asked to look at the possible uses of DDT in agriculture, and he carried out laboratory and field tests using some of the techniques that he had developed for his doctoral research. At the end of World War II, when many chemical firms went into the production of DDT, Ferguson recommended to Geigy Corporation that it should set up its own laboratory to develop DDT and other products. He then became chief entomologist and technical director of the Agricultural Chemicals Division, Geigy Chemical Corporation, a position he held until 1953. At that time he was asked to regroup that division, and he became president.

"It was my job to lead the company out of the red by developing new products," says Ferguson. "We opened two additional large plants—in Alabama and Louisiana—and produced other chemicals. I had the satisfaction of turning a business around and seeing the company grow from five to 150 million dollars a year."

Ferguson became executive vice-president of Geigy in 1969 and vice-president of CIBA-Geigy in 1970 following the merger of the two firms. He retired from the corporation in 1972. At that time, he decided to return to Oregon State University, where he is now a courtesy (non-salaried) professor of entomology.

"Dr. Ferguson is an active member of the department," says department chairman Ralph E. Berry. "His presence and his continued dedication to professional activities are an inspiration to us all."



George R. Ferguson examines wasp specimens at his microscope.

Special Report

Two College of Science Grads Make a Good Team

It is possible to have the best of both worlds. Ask Cynthia Peticolas (Biology, 1978), a College of Science graduate who earned a D.M.D. degree from the OHSU School of Dentistry in 1982. Since then, she has been practicing full time—first in Salem and, since October 1985, in both Salem and Mill City on alternate days.

Cynthia is married to Bradley E. Johnson (Biochemistry/Biophysics, 1979), another College of Science graduate who received a D.M.D. degree from the OHSU School of Dentistry in June 1985. Sharing a dental practice and life as husband and wife can have its hectic moments, but the Johnson-Peticolas team seems to be thriving.

Last year, Brad and Cynthia opened the North Santiam Dental Center, a rural practice in Mill City. Now they alternate their schedules between Mill City and the Lancaster Dental Center in Salem, where they have their own individual practices along with another dentist, Dr. Bruce Boer. It is obvious, however, that Drs. Johnson and Peticolas intend to retain their individual identity. They stress that they are never both in the same office at the same time, even though they might discuss professional problems about diagnosis or treatment of patients.

Cynthia and Brad have a one-year-old son, Christopher, who is the all-important addition to the partnership. They own a home with some acreage in Lyons. Horses, dogs, cows, and various other animals complete the rural setting, which suits them to perfection. Brad loves to fish and hunt. Cynthia, who has always liked to ride, now can take her son horseback riding on her own place. They both love to ski, canoe, and backpack.

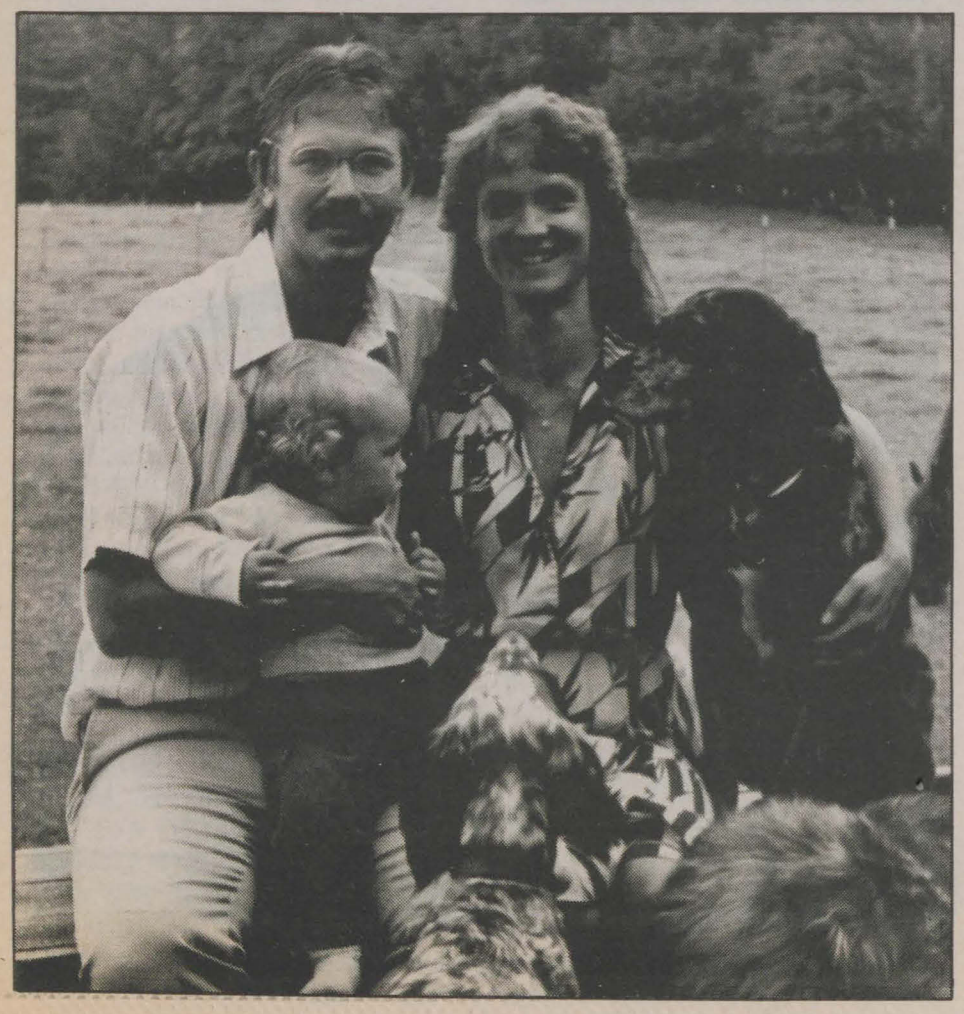
How does Dr. Peticolas manage a demanding career and motherhood? "Brad is a wonderful father," she says. "We share parenting as well as all the tasks involved in managing a home and a dental practice. As professionals, we complement each other very well."

Cynthia points out with obvious pride that she never took a day off from work during her pregnancy, including the two and a half weeks that she was overdue. And she only stayed away from her practice for two weeks and three days after the birth of Christopher. She even managed to nurse the baby for six months, bringing him to the babysitter in Salem when she came to work (something she still does) and taking off briefly every three or four hours to nurse the baby.

Cynthia is a graduate of Churchill High School in Eugene. She came to OSU as an undergraduate because her father is a chemistry professor at the University of Oregon and she did not like the idea of going to school at the same institution where her father taught. Brad is a native of Delaware, where he grew up. He attended the University of Delaware for one year before coming to OSU as an exchange student in the Department of Fisheries and Wildlife. He decided to stay in Oregon and graduated from OSU with a B.S. degree in biochemistry. After graduation, he was undecided about a career, and he worked as a research assistant in the Department of Biochemistry at the OHSU School of Dentistry for three years. He tutored dental students in biochemistry and took many evening courses toward an MBA degree before entering dental school—courses that have proved very helpful in managing their farm and dental practices.

Always interested in science, Cynthia started at OSU as a preveterinary medicine major and then switched to biology. Her extra curricular activity was gymnastics, and she was a member of the varsity team for four years. She began to think about dentistry as a career in her junior year when her own dentist in Eugene suggested that she consider dentistry. Dr. Kenneth Johnson of Corvallis let her observe his practice, and she decided to apply for admission to the OHSU School of Dentistry.

"I was already in dental school when I met Brad for the first time," notes Cynthia. "I didn't know him at all at OSU. We decided to marry when I graduated from dental school and he was beginning his first year. After I found work in Salem with Dr. Boer, we decided that it would be best to live halfway between Salem and Portland. We lived in Canby (where the farming started) until last year when we bought the house in Lyons and opened the practice in Mill City."



Farthing Wins Excellence Award

Patricia A. Farthing in her classroom at Corvallis High School.

College of Science graduate Patricia Farthing (Science Education, M.S. 1979), a science teacher at Corvallis High School, recently won a $5,000 Award for Excellence in Science Teaching. The award is sponsored by the Oregon Museum of Science and Industry and by Tektronix Corporation. Only five teachers in Oregon received the award.

In addition to this singular honor, Farthing is one of three state finalists for the Presidential Award for Excellence in Science Teaching, which is sponsored by the National Science Foundation. The winner of that award will be announced in September 1986.

Judging from the enthusiasm that she generates in her students, Farthing fully deserves both honors. She has the key attributes that make a first-rate teacher.

"I love what I am doing," she says. "It is like a dream come true. I always had an interest in being a field biologist myself, but I also wanted to be a teacher. Now I combine a little of both." The secret to her success is that she brings into the classroom her genuine curiosity and a life-long concern with all living things.

One of the classes she teaches at Corvallis High is Field Studies in Natural History, a course that covers wildlife management, endangered species, stream ecology, and marine biology. One of her favorite class projects actively involves students in the study, evaluation, and physical restructuring of a stretch of stream to increase its fish-rearing potential.

"I have learned a lot about techniques through my own interest," says Farthing, "and by working closely with the Oregon Department of Fish and Wildlife and dozens of people at OSU, as well as other experts in the community."

Raised on a ranch south of Pendleton, Farthing learned first-hand about animals and plants. When she studied advanced biology as a high school senior, she knew that she wanted to teach biology. Later she earned two B.S. degrees (one in biology and one in secondary education) at Eastern Oregon State College and a master's degree in science education at OSU. She taught biology at Mazama Mid-High School in Klamath Falls for two and a half years before coming to Corvallis High in 1977.

"In the last three years I have also adopted a new teaching approach," notes Farthing, "and now I make new presentations in class almost every day. It means countless hours of work outside class time, but it pays off. In my natural history classes, I use some of the things that I learned in Dr. Storm's classes at OSU, and it is great to see my students excited about the class projects."

How does Farthing feel about winning one of the Oregon Excellence Awards and being a finalist for the Presidential Award? "It has been overwhelming," she says. "There are so many good teachers out there, that I think it is a real honor to be selected. It makes you want to try that much harder."

College of Science Alumni News

The College of Science recently contacted all science alumni to learn more about their continued progress and their career highlights. The response to this inquiry was impressive, and we are pleased that so many took the time to write. Most of the information received is reported on these pages. A few responses arrived too late to be included and will be reported in a later issue of the *Science Record*.

1930-49

Robert T. Small (Chemistry, 1935) taught high school science for two years after graduation. He then spent 35 years as a meteorologist with the National Weather Service. In 1974, after his retirement from NWS, he became a certified consulting meteorologist. He lives in Spokane, Washington.

Leonard F. Fuller, Jr. (General Science, 1935) spent four years in the Navy during World War II and 34 years with Bechtel Corporation. He began as senior draftsman and served as engineer and manager in the U.S. and in several overseas assignments, including Australia, Saudi Arabia, and the Netherlands. He retired in 1981 as executive engineer, and he is now living in Santa Rosa, California.

Charles S. Bennett (Mathematics, 1938) retired from the U.S. Navy in 1959 as lieutenant commander. He was later employed by Georgia Pacific Corporation as senior store keeper. He has kept a lively interest in OSU varsity sports (being a former member of the OSU wrestling team when Tim Dixon was coach). He lives in Newport, Oregon.

John R. Perkins (General Science, 1938) received an M. D. degree from the University of Minnesota and an advanced degree in Public Health from the University of Michigan. He is still practicing full-time as a pediatrician in Middletown, Ohio.

Roger G. Scott (Entomology, 1938) spent four and one-half years in the U.S. Army during World War II. He then worked for 29 years in Research and Development with CIBA-Geigy Agricultural Division. He retired in 1977 and currently resides in Twin Falls, Idaho.

Edward D. Smith (Bacteriology, 1939) received a master's degree in biochemistry at the University of Southern California. He went on military active duty and spent 30 years in the U.S. Air Force, retiring as a lieutenant colonel in 1968. He then moved to Charlotte, North Carolina, where he taught science and military science in secondary schools. He returned to public health work in 1972, retiring for a second time in 1980.

Norman H. MacKay (Chemistry, 1940) spent 42 years (1942-1984) in laboratories and manufacturing plants for the design, testing, and manufacture of atomic weapons. "My B.S. in chemistry was extremely helpful," he says, "in attaining progressively important, supervisory positions."

Oliver D. Olson (Chemistry, 1941) after World War II entered the patent and trademark practice as Patent Agent. He is still self-employed in that field.

Edgar S. Fortner (Zoology, 1941) entered medical school after spending four years in the U.S. Army. He graduated in 1951 and received further training in hospitals in St. Paul, Sacramento, and elsewhere. He has been in general practice in Oroville, California, since 1955.

Paul Mowry (Entomology, 1942) worked for Chevron Chemical Co., Ortho Division, for 32 years and retired in 1982. He married Betty Grannis in 1940, and they have four daughters and 10 grandchildren. They live in Grandview, Washington.

Robert F. Peck (General Science, 1942) retired in 1982 after 38 years in the field of hospital-based medical radiography. He spent most of those years in Southern Oregon and now lives in Grants Pass, Oregon.

James A. Riley (General Science, 1942) received an M.D. degree from the Oregon Health Sciences University (OHSU) and postgraduate training at the University of Minnesota and OHSU. He is a Fellow of the American College of Physicians and a member of the American Federation for Clinical Research. He was a partner in the Corvallis Clinic from 1949 to 1985, the year of his retirement.

Malie Corbett Clarke (General Science, 1943) after graduation became a registered medical technologist and worked at Emanuel Hospital in Portland for five years. She then took time out to raise four children. Eighteen years ago she returned to work part time in a small clinical laboratory, where she is still working today.

David H. Cutsforth (Geology, 1943) earned a master's degree from the California Institute of Technology in 1947. He is president and owner of a Ford dealership in Albany, Oregon.

John F. Hayes (General Science, 1944) received an M.D. degree from the Oregon Heath Sciences University in 1947. He then completed an internship and residency in surgery. He has practiced surgery in Portland since 1955.

Jerry Kimmell Waite (Bacteriology, 1947) spent 15 years after graduation raising a family. She later worked for a short time in quality-control industrial chemistry for the Seattle Health Department and for ten years for Honeywell, Inc. She retired in 1982.

1950-1959

Walter F. Bethune (General Science, 1950) received a D.D.S. degree from the Oregon Health Sciences University in 1954. He has practiced dentistry in the Lake Oswego area for the last 30 years. He married Patty Neabert from Grant High School, and together they raised five children "plus numerous horses, dogs, and cats."

Frank G. Curl (Mathematics, 1950) retired in 1983. "Soon became bored," he says. "Formed a company called MACULA (rhymes with Dracula) to solve problems in formal logic and study space-based weapons systems." He resides in Orlando, Florida.

James E. Davis (Premedicine, 1950) graduated from the Oregon Health Sciences University with an M.D. degree in 1953 and practiced medicine in Milwaukie, Oregon, for 32 years.

Joseph H. Lauby (Physics, 1950) worked for 30 years at Hanford, Washington, doing test reactor and critical mass research for General Electric Corporation and Battelle. He is now retired and living in Richland.

Maurice W. Rea (General Science, 1950) began his career in the U.S. Navy in 1950. He retired as commander in 1970. Since then, he has been consultant/engineer in communications. He is presently employed as communication engineer for Dettra Communications, Inc., Washington, D.C.

David Wagstaff (Bacteriology, 1950) is health physicist and assistant manager of the Radiation Control Section, Oregon State Health Division.

John D. Wortman (Mathematics, 1950) took a position as analyst at Aberdeen Proving Ground in 1953, and since then he has worked in the Ballistic Research Laboratory as a mathematician. He married a '51 OSU Home Economics graduate in 1953. They have three children.

Benjamin E. Dooley (General Science, 1951) graduated from the Oregon Health Sciences University School of Dentistry in 1955. He entered the U.S. Air Force Dental Corps in 1955 and retired as full colonel in October 1980. At that time he was awarded the Legion of Merit. He is now teaching at the University of the Pacific in California. He is married to Betty (Loren) Dooley. The Dooleys have three sons (all graduates of the Univ. of California at Davis) and three grandsons.

Catherine Talbott Runyan (Microbiology, 1951) is a medical technologist at Bess Kaiser Hospital in Portland. She has kept abreast of new developments in laboratory procedures with continuing education courses, and she is registered and certified by the American Society of Clinical Pathologists. She recently obtained a private pilot license and is now nearing completion of instrumental flight rating.

Bill Rose (Bacteriology, 1953) received a master's degree in bacteriology from Utah State University in 1959. He is now an operations research analyst microbiologist at Dugway Proving Ground.

1960-1969

Sonnie Hayes Stevens (Science Education, 1960) earned a doctoral degree in science at Arizona State University in 1974 and was selected Outstanding Educator by the Arizona chapter of Phi Delta Kappa in 1985. She teaches science in the Scottsdale district and was a district representative to the 1986 NSTA convention in San Francisco.

Bruce B. Henry (Chemistry, 1960) currently programs and operates a laser system to trim printed resistors on hybrid circuit boards. He was on a U.S. Air Force Atlas-F missile crew for four years. Later, he worked for Crown Zellerbach in Camas, Washington, and for other corporations in Palo Alto and in Portland.

Charles E. Hull (Mathematics, 1960) is a system analyst at the Oregon Health Sciences University.

Peter A. Castrie (Bacteriology, 1961) earned a Ph.D. degree in microbiology at Montana State University in 1969. He is now professor of biology at Duquesne University, Pittsburgh, Pennsylvania.

Frederick N. Fritsch (Mathematics/ Chemistry, 1961) earned M.A. and Ph.D. degrees in applied mathematics at tbe University of California at Berkeley. He has been employed in the Computation Department at Lawrence Livermore National Laboratory since 1964 and has published numerous papers in the area of numerical analysis.

Don E. Heard (Mathematics, 1961) received an M.A. degree from the University of Alabama in 1965. In 1984 he was appointed technical training manager of the Information Display Group at Tektronix.

James L. Hiatt (Geography, 1961) is an outdoor recreation planner for the National Park Service. He lives in Lafayette, California.

Karen L. Nickel-Creusere (Chemistry, 1961) earned master's and doctoral degrees from Kansas State University. She was awarded a postdoctoral fellowship in clinical chemistry and is now laboratory director for the Endocrine Metabolic Center, Oakland, California.

Lawrence H. Merk (Mathematics, 1961) earned an M.A. degree in economics from the University of Washington in 1963. He is now director of the Center for Business Development and Research at the University of Idaho.

Jack Goebel (Mathematics, Ph.D., 1962), who received his Ph.D. degree in mathematics under OSU professor Harry Goheen (now retired), is dean of arts and sciences at Montana College of Mineral Science and Technology. He married the former **Janet Gore** (Home Economics, 1977), and they have two children: Joseph, two years old, and Jacob, two weeks old.

1970-1979

Chris Broili (Geology, 1970) earned an M.S. in geology after leaving OSU. He is senior minerals geologist with Atlas Precious Metals, Inc. in a gold exploration program in Nevada. He lives in Sparks with his wife and four children.

James M. Craig (Microbiology, Ph.D. 1970) retired in June 1986 after teaching for 38 years at San Jose State University. "An Orchid Digest Research grant for the bacterial diseases of orchids will keep me busy for two more years," he says.

Gerald P. Jacobson (Geography, 1970) returned to OSU in 1975 to earn a master's degree in Land Resource Geography. He began work as a city planner in Eugene in 1977 and is now Planner III.

Willis L. Johnson (Mathematics/Computer Science, 1970) graduated in 1985 with the 50th class for Professional Management Development at the Harvard Business School. He is currently a manager in the Software Service/Support Strategy of IBM. He lives in Highland Mills, New York.

Kathy Ogle Manville (General Science, 1970) is sales manager for the NW branch of Curtin Matheson Scientific, a national distributor of laboratory equipment and supplies. She lives in Bellevue, Washington, with husband David.

Frederick C. Roecker, III (General Science, 1970) was commissioned in the U.S. Army in 1970 and spent seven years on active duty as an artillery officer. He now works as an underwriting supervisor for Aetna Life and Casualty and is a major in the Army Reserve. He and his family (three boys ages nine, seven, and four) live in Redlands, California.

Richmond Blair Sturgill (Science Education, 1970) returned to OSU to earn a master's degree in science education. After teaching science for nine years in Roseburg, he became an agent for State Farm Insurance in that same city.

Janet L. Brandeburg (Science Education, 1971) earned a master's degree in biology and chemistry education at Pacific University in 1982. She teaches high school chemistry in Portland.

Dave Fuhrer (Mathematics, 1971) is manager of Education Computing Services at the OSU Computer Center. After graduation, he attended graduate school at OSU through June 1973 and then began working full time for the OSU Computer Center, where he had worked as a student programmer during 1968-1973. He was recently promoted to senior research assistant.

Marcel Hinsbeeck (Computer Science, 1979) is an information systems development specialist with Carnation Company in Los Angeles.

Thomas J. Hyde (General Science, 1979) earned a D.M.D. degree from the Oregon Health Sciences University School of Dentistry and completed a residency in oral and maxillofacial surgery at the State University of New York at Buffalo in 1985. He practices in Buffalo.

Scott Alan Johnson (Mathematics, 1979; M.B.A., 1981) is a programming manager with Hewlett-Packard in Corvallis.

Dan Kerrigan (General Science, 1979) obtained an M.D. degree from the Oregon Health Sciences University in 1983. He is now in the Department of Pathology at the University of Arizona.

David Murhammer (Chemistry, 1979) returned to OSU to earn a master's degree in chemical engineering (1982). He worked approximately two years in research and development at Teledyne Wah Chang in Albany. In 1984 he began a doctoral program in chemical engineering at the University of Houston.

Caroline Emmert Riblett (Prephysical Therapy, 1979) earned a B.S. degree in physical therapy from Pacific University and is now a physical therapist in Klamath Falls, Oregon.

Pat Rogers-Rochna (Geography, 1979) worked for the U.S. Forest Service and the Bureau of Land Management as a seasonal field botanist during 1979-1984. She is currently assistant project manager in the Environmental Section of the Oregon State Highway Division, where she works on environmental assessments and assists in writing environmental impact statements.

Mabel Sandoz Adams (Premedical Technology, 1979) is a medical technologist in a hospital transfusion service in Lewiston, Idaho.

1980-1986

John W. Bodnar (Biochemistry, Ph.D. 1980) completed a one-year postdoctoral fellowship at Yale University and is currently assistant professor of biology at Northeastern University in Boston. His field of specialization is molecular and cell biology.

Robert J. Russell (General Science, 1980) is flying A-6 Intruder Aircraft with the U.S. Navy and is assigned to Attack Squadron 115 aboard the U.S.S. Midway. When not deployed, he is at home in Atsugi, Japan.

Shelley Stewart (Biology and Microbiology, 1980) received a B.S. in medical technology in 1981 and is now working in Richland, Washington.

Scott Wettlaufer (Botany, 1980) earned a master's degree at Washington State University. He is now a research specialist at Boyce Thompson Institute for Plant Research, Cornell University, where he investigates the effect of environmental pollutants on plant growth and development. He plans to begin work toward a doctorate in plant physiology as soon as his wife completes her master's degree.

Garry Petrie (Physics, Electrical Engineering, 1981) earned a master's degree in electrical engineering at the University of Washington in 1984. He is currently a development engineer for Hewlett-Packard in Fort Collins, Colorado.

James M. Terry (Biochemistry/Biophysics and Microbiology, 1981) received a master's degree in microbiology from Idaho State University in 1984. He is now in a Ph.D. program in microbiology at the University of Texas Health Science Center in San Antonio. His wife, Theresa (OSU, '82), is also a Ph.D. candidate at the same institution and will receive a doctorate in clinical pharmacy next year.

John J. Wulf (Microbiology, 1981) is a microbiologist with a bio-technology firm in Belmont, California.

Raymond P. Donnelly (Microbiology, M.S. 1982) is completing a doctoral dissertation on the role of anti-lymphocyte antibodies in the pathogenesis of autoimmune disease at the Department of Basic & Clinical Immunology and Microbiology, Medical University of South Carolina, Charleston.

Philip F. Mixter (Biochemistry/Biophysics, 1982) is a research technician for a bio-technology company in California. He will return to school for a doctorate in molecular biology in September 1986.

Philip Neil Narramore (Physics and Mathematics, 1982) entered the University of Arizona (Tucson) to pursue graduate studies in physics. "I received the M.S. degree in 1985," he says, "and was awarded the Cubic Corporation Award as an outstanding graduate teaching assistant in physics. I am currently a research assistant under Prof. John D. McCullen and doing work in plasma physics, with emphasis on numerical simulation/modeling."

Margaret Kracke (Microbiology, 1983) completed a 12-month internship in medical technology at Swedish Hospital in Seattle and received a B.S. degree in medical technology from OSU in 1985. She is now working as a medical technologist in the Clinical Microbiology Laboratory at Swedish Hopital.

Mitsuaki Nishibuchi (Microbiology, Ph.D. 1983) completed a postdoctoral research fellowship at the University of Maryland School of Medicine and in April 1986 began a new job in his native country as assistant professor at the Research Institute for Microbial Diseases, Osaka University, Japan.

Martin F. Chen (Microbiology, Ph.D. 1984) is associate fish pathologist with the California Department of Fish and Game.

Carl E. Mackewicz (Microbiology, 1984) is currently pursuing a Ph.D. degree in medical microbiology, and specifically in cellular immunology, at the University of California-Davis.

Jay C. Poorman (Premedicine, 1984) has completed his second year towards an M.D. degree at Washington University School of Medicine in St. Louis.

James Douglas Ripley (Botany & Plant Pathology, 1984) is associate professor of biology at the U.S.A.F. Academy in Colorado. He was promoted to lieutenant colonel in December 1985.

Patrick D. Barnes (Computer Science, 1984) graduated from the U.S. Air Force Officers Training School at Lackland AFB, Texas, in 1984 and was assigned to Beale AFB, California, as a tactical applications programmer responsible for development of communications and missile/satellite simulations. In June 1986 he was promoted to first lieutenant.

Keep in Touch

Please keep in touch and send us news of yourself, your relatives, or friends who are OSU College of Science graduates. Forward news items to the Office of the Dean, College of Science, Oregon State University, Corvallis, OR 97331.

Name_____

Major/Class_____

Address_____

City, State, Zip_____

Occupation_____

Employer_____

Address_____

City, State, Zip_____

Business Phone_____

News Item_____

_____

_____

_____

_____

_____

_____

Sent by_____

Major/Class_____

News from Classmates and Friends

'27

Lawrence Templeton, formerly a pharmacist and co-owner of a store in the Chicago area, has retired and moved to Sun City, Ariz.

Harold F. Ellis of El Toro, Calif., retired as a staff appraiser for the San Bernardino County Assessor's office in 1967. He and his wife have traveled extensively both abroad and throughout the United States since his retirement.

'31

Madge Coppock Thomson, who taught shorthand and typing at OSU her first year out of college, has lived in Heppner since 1932 and had a varied career as high school business teacher and librarian. She and her husband also operated the Thomson Bros. store there for many years.

'33

Clair Hampton Cox of Corvallis is a retired realtor who keeps busy with many volunteer activities such as political campaigning for Norma Paulus, the recent car show sponsored by the OSU Athletic Department, leading sessions of the Experimental College and public lectures for the retired.

'35

Betty Steel Genne and her husband are now living in a retirement community in Southern California after living in New York City for over 30 years.

Mr. and Mrs. **Kenneth Mayer (Isabel Van Waning)** of Lebanon celebrated their 50th wedding anniversary on June 28 at the Pineway Golf Course. Kenneth was in the retail business for many years in Lebanon, and Isabel is a retired secretarial science and journalism teacher.

Robert T. Small taught high school science for two years after graduation and then spent 35 years as a meteorologist with the National Weather Service. When he retired, he became a certified consulting meterologist living in Spokane, Wash.

Leonard F. Fuller, Jr. is now living in Santa Rosa, Calif., since his retirement as executive engineer for Bechtel Corporation. During his 34 years with the company, he served as engineer and manager in the United States and in several overseas assignments including Australia, Saudi Arabia and the Netherlands.

'36

William J. Fluke and his wife, **Elizabeth Cotta**, '46, are living in Fort Myers, Fla., since Fluke's retirement as state statistician for the Pennsylvania Crop Reporting Service. They spend their summers in New Hampshire at Merry Meeting Lake.

Willard S. White is now retired in Tigard, and he and his wife just returned from a 10,000 mile trip around the United States visiting 31 states.

'38

Robert C. Ingalls of Corvallis, retired publisher of the Corvallis Gazette-Times, has been appointed to the Oregon Government Ethics Commission by Gov. Vic Atiyeh. Ingalls is a former member of the Oregon Legislature, served on the Oregon State Board of Higher Education and has served as chairman of the Oregon Expo 86 committee.

'44

Louis F. "Choc" Shelton, longtime manager of the Fremont Sawmill in Lakeview, was recently honored for 40 years of contributions to the Lakeview and Paisley communities. Shelton was the founding father and general manager of Mercy Flights for transportation of people needing medical care unavailable there, and he also serves on the board of directors for the Collins-McDonald Trust Fund for the education of Lake County youth.

'46

Gay Chin is working as a lawyer for the Martin Marietta Corporation in Potomac, Md., and for recreation likes to play in national tennis tournaments.

'49

Herb Booth, formerly basketball coach at Mt. Hood Community College, has abandoned his early retirement to take the athletic director's position at Warner Pacific in Portland. Mrs. Booth (**Elizabeth "Beth" Mehring**, '46) was a teacher at Centennial High School for 19 years before retirement.

Clara Dysert Perin has had to sell her small flower shop across from the University of Northern Colorado in Greeley so that she can move to Santa Ana, Calif., where her husband has taken a management position with Transamerica Title Insurance Co.

'50

Clarence Walden, retired judge of Yolo County Municipal Court in Woodland, Calif., was recently presented the Liberty Bell Award for more than 20 years of service as a municipal judge. The award is presented annually to a non-practicing attorney who does the most to promote understanding, respect, and observance of the law among citizens. Since retirement he continues to officiate at many weddings in the area and serves on assignments in numerous courts.

Henry L. Bauer, senior attorney of Bauer, Hermann, Fountain & Rhoades in Portland, has been elected president of Columbia Pacific Council, Boy Scouts of America. Bauer holds the Silver Beaver Award, which is the highest honor which can be bestowed by the Council for volunteer service.

'52

Ed Hardt joined the Oregon Highway Division in 1952 as a structural inspector on a bridge crew in Portland and in June retired as metropolitan engineer after contributing 34 years to the state's highway system.

'56

Col. **Norman F. Rauscher** is now living in Stayton since his retirement from the U.S. Air Force as vice commander of the Air Weather Service at Scott AFB, Ill.

Ellis Dee Skidmore of Madras retired as a commander from the U.S. Navy and later owned an insurance agency from which he retired in 1983.

'57

Etta Mae Detering has been employed as public health nursing supervisor in Lewis County in Washington and Marion County of Oregon during her career. Her last position was director of Student Health Services at Oregon College of Education (now WOSC).

'58

Robert J. Arnold earned a master's degree in computer science from the Naval Postgraduate School and is now an advanced systems engineer with Lockheed Missiles and Space Company in San Jose, Calif.

Zane K. Campbell, who is now president of a small automation firm, earned an MBA degree at UCLA and also participated in an advanced management program and in a program for technical managers at Carnegie Mellon University.

Donald Grettam, a retired commander from the U.S. Navy Reserve, received a law degree from the University of Santa Clara and is now a commercial underwriter for State Farm Fire and Casualty Co.

Dr. **Larry C. Oglesby** is professor of biology at Pomona College in California and has worked in marine biology laboratories in various parts of the world.

Marylin Hough Werschky taught junior high school science for four years in the Denver area and then retired to become a wife and mother. She has served in a variety of volunteer efforts.

'59

Anne White Solt and her husband have been living in Prescott, Ariz., since 1963 and have the oldest independent clothing store there. They have just opened a department specializing in Pendleton wools from Oregon.

Sally Gribben of Honolulu became a CPA in 1975 and owns an accounting firm. She was partner in a firm that owned a research submarine in the Pacific and "was the first woman to dive below 200 feet," she says.

'61

Thomas R. Bunch, an OSU Extension Service employee in Central Oregon for the past 21 years, has been appointed extension agent for Baker County. He and his wife have moved from Prineville to Baker.

Joan Zimpelman Shalikashvili has just returned from two years in Nurnberg, Germany, where her husband was stationed with the U.S. Army, and is now living in Fairfax, Va.

Lawrence H. Merk, who earned a master's degree in economics from the University of Washington in 1963, is director of the Center for Business Development and Research at the University of Idaho in Moscow.

'62

John R. Mitzel is a microbiologist for the U.S. Department of Agriculture after earning a master's degree in veterinary microbiology.

Boyd D. Nash is working as safety manager for the U.S. Bureau of Mines in Albany.

Jim Pero retired from the U.S. Air Force in 1984 and is currently working toward an M.S./Ph.D. in electrical engineering at the University of Colorado in Colorado Springs.

Dr. **Donald A. Vassler** is working for Geosource in Houston as manager of the Computer Graphics Group involved in oil exploration using seismics.

'64

Dr. **Elaine Kleiner**, professor of English at Indiana State University since 1969, is currently working on a series of reviews of the "new science literature." She recently was a featured speaker at the Creativity and Science Conference in Honolulu.

John E. Heyerly has a new job as coordinator of the South Central Conference for the Mennonite Church in Houston, Tex.

Karen Beal Martin is taking a sabbatical leave from the community college where she is an instructor so that she and her husband can do some traveling. They live in Arco, Idaho.

'65

Sara Vandenburgh Sells has resigned her job as manager of conservation and consumer services at Columbia River People's Utility District in St. Helens and moved to Medford. She hopes to find a public relations position there.

Dr. **Caroll Combs Lee** recently joined the graduate faculty at SUNY-Buffalo after completing a program of nutrition/cancer research at the University of Wisconsin Medical Sciences Center in Madison.

Col. **Robert Wesley Wilson**, member of the Oregon National Guard since 1953 and currently serving as brigade commander, has been appointed to the Oregon Military Council by Gov. Vic Atiyeh. Wilson is assistant superintendent of North Clackamas School District No. 12 in Milwaukie.

Thomas E. Futter is currently living in a nursing home in Ontario since being striken with multiple sclerosis and spends much of his time selling T-shirts from his wheelchair or by mail. Profits from the T-shirt sales are donated to the national Multiple Sclerosis Society to help find a cure for the disease.

'66

Carl Payne, director of operations at Oregon Cherry Growers, Inc., in Salem, has been elected president of the Maraschino Cherry and Glace Fruit Assoc. His wife is the former **Sherry Smith**.

Corinne Alexander Service who was the oldest person to graduate from OSU in 1966 at age 65, is living in a retirement residence in Eugene enjoying life enriched by her college experience.

'67

Maurine C. Boley completed his MBA degree after retiring from the U.S. Air Force and is retired as chairman of the Business Department at Portland Community College. Boley recently returned to teaching as adjunct professor at the University of Portland.

Richard A. Dexter lives in Morristown, N.J., where he is now product manager for all network and radio equipment, sales, manufacturing, distribution and servicing sold to companies providing cellular service by AT&T.

Carroll E. Salls, former dean of instruction at Heald Business College, is now an instructor at American River College in Sacramento, Calif.

Jerry Kuykendall, chemistry teacher and head of the science department at West Linn High School, was one of five secondary school teachers to be presented with the third annual Award for Excellence in Science and Mathematics Teaching presented by the Oregon Museum of Science and Industry and the Tektronix Foundation.

'68

Paul E. Bialous of Port Angeles, Wash., has been promoted to manager of forest and wood products at ITT Rayonier.

John A. Church is now director of the System Product Division of Weyerhaeuser Information Systems in Tacoma, Wash.

Lt. Col. **Ronald C. Clement** of Sacramento, Calif., has served in the U.S. Army for over 18 years. He plans to retire in several years and return to Oregon to open a pre-school learning center.

Duane W. Hess works for Portland General Corporation where he was recently promoted to manager for investor relations/investments.

Roger Nibler is now self-employed as a business management consultant in Portland and teaches part-time in the School of Business at Portland State University.

James D. Noteboom is an attorney specializing in Indian law and energy law for Johnson, Marceau, Karnopp & Petersen, Attorneys, in Bend.

Roland D. Whitsell is chairman of the Business Division of Volunteer State Community College in Gallatin, Tenn.

Dr. **Richard P. Quinn**, who joined Burroughs Wellcome Company in 1970, has been promoted to research scientist V in organic chemistry. He is resident of Cary, N.C.

'69

Michael Keith Gordon lives in Boulder Creek, Calif., and is product manager for manufacturing systems at ASK Computer Systems, Inc. in Los Altos.

'70

Sue Anne Sanford Renkin is studying civil engineering at Michigan Tech, and her husband (**Dennis P. Renkin**, '69) is general manager of Northern Hardwoods in South Range, Mich.

Capt. **Steven Bruce Jansen** is a pilot in the U.S. Air Force stationed at Dyess AFB in Abilene, Tex. He completed a master of science degree in systems management at USC in 1985.

Roger Barkus is vice president of Inner-Product Simulation, Inc., in Portland. He lives in Aloha.

Viravat Cholvanich lives in Bangsue, Bangkok, Thailand, where he is managing director for the Siam Cement Rrading Co. He is married to **Vorathavee Na Lumpoon**, and they have three children.

Ted Colvin works in the building industry for Resort Properties, Ltd., in Mt. Crested Butte, Colo.

'71

Donner Franklin Babcock is associate professor of research in the Department of Biochemistry at the University of Washington in Seattle.

Dave Cagley is president of Twin Mills Resort, Inc., a camping resort with 420 sites on 153 acres, in Howe, Ind.

H. Russell Heritage, chairman of the Departments of Business and Computer Science at Treasure Valley Community College in Ontario, was selected 1985 Instructor of the Year there.

Thomas Johnson has been a partner in an auto dealership (Ford, Lincoln, Mercury, Chrysler, Plymouth and Dodge) since 1982 in Watsonville, Calif.

Gerry A. Young has accepted the position of director of strategic analysis at Allnet Communications in Birmingham, Mich.

'72

Dr. **Stephen H. Johnson**, who spent a year with Amoco London in England as geophysical technical adviser, is returning to Amoco's Tulsa Research Center in Oklahoma this fall.

Mary Patricia Lydon, who has either been attending graduate school or teaching physical education and health in Australia the past 14 years, has moved to Eugene where she now works at Fiddlers Green Golf Course.

Corky Barrell is on the executive staff and in charge of transportation and vehicle maintenance at the Sun Valley County Garage in Sun Valley, Idaho.

Steve DeAutremont moved from Corvallis to Denver in 1984 to accept the position as Central District administrative manager for CH2M-Hill.

Michael D. Richardson and his wife are living in Lerici, Italy, where he is a senior research scientist at the NATO Saclant ASW Research Centre.

William L. Denney moved from El Paso, Tex., to Bellingham, Wash., where he has formed a start-up company, Geographic Technology, Inc.

William Dean McCluskey has been a principal in a mortgage banking/commercial real estate brokerage firm, National Mortgage Co., in Portland the past five years.

William Huhta of Costa Mesa, Calif., has been promoted to distributor sales manager for Phase II Technology, Inc. For recreation he competes in marathons and triathalons in Southern California and Hawaii.

Michael P. Jeffries works as new business products manager for Exxon Chemical Americas in Houston, Tex.

Scott Carpenter is in the insurance business in Eugene and has won the Republican primary election for the Oregon State Senate, District 20. His wife, **Ann Kelley Cable**, '77, is a caseworker with the Adult and Family Services Division.

John Landers is now manager of cost and reporting for General Foods Corp. in Woburn, Mass.

Tom Lipman of Portland is president of Lipman & Associates, an industrial advertising agency specializing in wood products, machine tools, and irrigation markets on both domestic and international levels.

William B. Schultz has been promoted to branch manager for Northern California of MCC Powers in San Francisco.

Edward N. Sipp, previously department manager for Portland General Electric, has started a consulting business, AMIS Northwest. He lives in Banks.

Glenn S. Sunakoda is employed at the Navy Public Works Center in Pearl Harbor, Hawaii.

'73

Lucinda Kerr Enderby received her CPA license from the state of California in 1983 and now works for the certified public accounting firm of Robert W. Hanrahan in Carpinteria, Calif.

James W. Greer is the Oregon Department of Fish and Wildlife's new assistant regional supervisor for the Northwest Region where headquarters are at Adair Village north of Corvallis.

Kenneth N. Bowman lives in Seattle where he is senior operations and systems analyst for Boeing Aerospace Company.

Max Kimmel has been promoted to manager for product merchandising for Roseburg Forest Products Co. in Roseburg.

Richard G. Korn is employed as finance and planning manager for the Food Products Division of Weyerhaeuser Co. in Tacoma.

Micheal D. Townes is organizational development facilitator for Crown Zellerbach Corporation in Clatskanie. His wife (**Patty Chenoweth**, '71) teaches part-time, and they are both volunteer field representatives for AFS International (student exchange programs).

Brent C. Walker is working for the Thomas Creek Lumber & Log Company in Stayton.

'74

Dennis S. Nelson of Lorain, Ohio, is a meteorologist for the U.S. Weather Service in Oberlin, Ohio.

Robert C. Kleinkopf is an architect with Wimberly, Whisenand, Allison, Tong & Goo, Architects Ltd., in Honolulu. His wife (**Jennifer Bartlett**, '86) works as a graphic designer.

Dr. **Peter Eilers** of Corvallis, associate professor of geography and environmental science at Willamette University, has been appointed to the Natural Heritage Advisory Council by Gov. Vic Atiyeh.

Lori Manning Buchman and her husband, **Tim Buchman**, '74, are moving from Astoria to Fields where they will be the only teachers for the elementary school in this remote area in Southeastern Oregon.

Danny K. Iu lives in Vancouver, British Columbia, Canada, where he works for the Federal Business Development Bank.

Ronald J. Bales is a shareholder and officer for Nelson, Rooper & Onstott, P.C., in The Dalles.

Leo E. Mottau is chief financial officer for Douglas Pacific Lumber Co. and one of the founders of AGM&M, Inc., a logging company, in Bandon.

'75

Dr. **Michael Ernest Morgan** is chairman of the Mathematics Department at Linn-Benton Community College. He and his wife live in Salem.

Don Clinton Tavolacci is self-employed at the Financial Services Corp. in Boise, Idaho. Mrs. Tavolacci is the former **Karen Gross**, '74, who is a homemaker.

Deborah Hart Wilson is working as a part-time pharmacist and teaching part-time at Southwestern Oregon Community College. Her husband, **Michael S. Wilson**, '76, is a logging foreman for Weyerhaeuser in North Bend.

Class News

Ann Johnson Jensen and her husband, who live in Claresholm, Alberta, Canada, had triplets, Peter, Erik and Joanna, born April 16, 1985.

Daryl R. Greenway is working as a senior geotechnical engineer for the British government of Hong Kong in Kowloon.

Cicely Hand Hanford works as a freelance video producer and is currently producing the 1986 March of Dimes Telethon in San Francisco.

Rick E. Beadnell lives in Beaverton where he is group manager for financial systems at Nike, Inc.

William B. Bond has been selling real estate since 1976 for Early, Inc., Realtors in Kalamazoo, Mich.

Dale A. Branch of Portland has been promoted to consumer products territory manager at John Deere Company.

Wendy D. Cole is an independent sales representative for accessories and domestics for the Northwest for Vera Industries of New York. She lives in Bellevue, Wash.

Donald W. Dickinson lives in Glendora, Calif., and is purchasing manager for the intermountain power project of ASEA, Inc. of Sweden.

Adrian Mok is a microcomputer system analyst for San Diego Gas & Electric Company in California.

Brett A. Nelson is living in Raleigh, N.C., and is district sales manager for Tektronix, Inc.

Roger D. Anderson was recently promoted to Far East Region finance director for Pepsi-Cola International, Ltd., in Singapore.

'76

Sally Sue Simpson is now working as assistant professor in the Department of Sociology at the University of Oregon in Eugene.

Jean Albaugh McKnight has moved to Chugiak, Alaska, and hopes to pursue a banking career in Anchorage, where her husband is a dentist.

Lee A. Barney has been promoted to general manager for information resource management at Portland General Electric Co. in Portland.

Dale Berggren lives in Corvallis where he is instructor in the Department of Management Science, College of Business, Oregon State University.

Wai Ming Cheung started his own consulting business both as engineer and management system analyst, Cheung & Company, in Ogden, Utah.

Phil Fernandez of Beaverton is now national sales manager for Magni Systems, Inc., a start-up high technology company.

Jim Geisinger is vice president and general manager of Western Forest Industries Assoc. in Portland.

David N. Knowles works as division controller in the Semiconductor Test Systems Division at Tektronix, Inc., in Beaverton.

John Lindeblad is vice president and chief operating officer for ISC Systems Corporation in Spokane, Wash.

Richard McCallister was recently promoted to manager of financial planning for Consolidated Freightways in Menlo Park, Calif.

Charles H. McKeown is now vice president of industrial development resources for Schuchart & Associates, Inc., in Portland.

Hugh Richard White has been the managing partner since 1976 of Cascade Pacific Investments in Salem.

'77

Sandra Jean Osborne is manager of a retail store, Banana Republic, in San Francisco. She makes her home in Tiburon, Calif.

Charles Allcock is senior planner in corporate planning and corporate economist for Portland General Electric in Portland.

Sonja Berglund Bolon is a freelance illustrator and mother of two small children living in Beavercreek.

Frank Barnekoff is employed as manager of purchasing for Abbott Laboratories in Salt Lake City, Utah.

Susan J. Upton is a medical technologist with the Indian Health Service in Santa Fe, N.M.

Robert L. Edwards of Portland is senior manager for forest products consulting at Arthur Andersen & Company.

Neil Imper works as financial manager for Klamath operations (Oregon Division) at Weyerhaeuser Forest Products Co. in Klamath Falls.

Frank E. McCaslin, III, has been promoted to marketing and planning manager of Crescent Foods in Seattle, Wash.

Richard Thomas is now forecasting analyst at First Interstate of Oregon in Portland.

'78

Rick David Johnson is a pilot with Northwest Orient Airlines based at the Minneapolis/St. Paul International Airport. He and his wife live in Robbinsdale, Minn.

Ione Crandell lives in Corvallis where she is employed as a project manager for Hewlett-Packard.

Mike Day was promoted to manager of financial planning for Leber & Company, P.S., in Seattle, Wash.

Craig H. Laursen and his family live in Bonsall, Calif., where he operates Wean Nursery.

'79

Sally Hardman Hunt is working in public accounting for the Florida State University School of Graduate Research in Tallahassee. Her husband, **Joe Hunt**, works as an environmental scientist for the consulting firm, Ecology & Environment.

John Houde, who taught junior high science classes for four and one-half years, is now a forensic chemist at the Ventura County Sheriff's Crime Laboratory in Ventura, Calif.

Dr. **Lisa Webb Minor** was awarded a Ph.D. degree on May 18 at the Pennsylvania State University College of Medicine at The Milton S. Hershey Medical Center in Hershey, Pa. She plans to begin work as a Postdoctoral Fellow in the Departments of Biochemistry and Physiology at the Medical College of Pennsylvania in Philadelphia.

Eric Carlson has been promoted to director of marketing for PML Microbiologicals in Tualatin.

Dr. **Michael Goul** received a Ph.D. in computer science in 1985 and is now a member of the faculty in the School of Business at Arizona State University in Tempe.

Judith M. Owen works as supervisor of manufacturing cost accounting for Rolm Mil Spec Computers in San Jose, Calif.

Debra Larson Dennis is employed as an accountant in Raymond, Wash., and her husband (**Brent A. Dennis**) is an inventory manager there.

Ian F. Robertson, Jr., is now the owner of the business firm, Robertson, Ham & Wallace in Portland.

'80

Malcolm V. Cantor lives in Melbourne, Australia, where he is a systems engineer for International Business Machines. He has also participated in graduate and undergraduate programs in various colleges and universities in Australia by tutoring and lecturing over the past several years.

John D. Barton is now employed as a project manager at Intel Corporation in Hillsboro.

Robert Reynolds, Jr., is working as controller for Barkhousen Bros., Inc., in Turlock, Calif.

Wing-Kit Chung is a CPA working with IBM mainframe computer in financial system development for the city of Eugene.

Chris Rudolph has been promoted to senior auditor for Benjamin Franklin Savings & Loan Association in Portland.

Army Private **Edmund L. Jordan** recently completed basic training at Fort Sill, Okla., and received instruction in drill and ceremonies, weapons, map reading, tactics, military courtesy, military justice, first aid, and Army history and traditions.

Dr. **Adnan Allen Shqueir** is associate professor in the Department of Life Sciences at Bethlehem University in West Bank, Israel. He is also president of the Agricultural Engineers Association and the union of the teachers there.

Geoffrey L. Theurer of Beaverton has been promoted to controller of the Tektronix Federal Credit Union.

Stephen Thompson is general manager of the Tacoma operation of Milgard Manufacturing, Inc.

Hironori Peterson completed his Navy tour and is now working as a training engineer for Westinghouse Electric Corp. in the Nuclear Training and Operational Services Division.

Stephen Day has been promoted to assistant vice president of First Interstate Bank of Oregon in Portland.

Jerome Martin Dummer, Jr., senior project engineer, has been named head of the Facilities Engineering Support Office at the Naval Civil Engineering Laboratory, Port Hueneme, Calif. He and his family live in Oxnard, Calif.

'81

James E. Couey, a civil engineer with the U.S. Army Corps of Engineers in Barstow, Calif., will be attending the University of Washington this fall to pursue a master's degree in construction engineering and management. His wife is the former **Janis Takami**, '77.

Navy Lt. **Stephen C. Rorke**, a member of Tactical Electronic Warfare Squadron 133 based at Naval Air Station, Whidbey Island, Wash., is currently participating in a Western Pacific deployment aboard the aircraft carrier USS Enterprise.

Judy Johnson Jensen and her husband of Portland had a baby girl, Bethany Kristine, on July 4.

Catherine Singkofer Walker works as a computer programmer/analyst for Northrup Corporation in Anaheim, Calif., and her husband (**Sean Jeffrey Walker**, '80) is a production supervisor for Kimberly Clark Corporation in Fullerton.

Marine Capt. **Gregg L. George** has been promoted to his present rank while serving with the 2nd Marine Aircraft Wing, Marine Corps Air Station, Beaufort, S.C.

William Lee Duncan is a data processing systems manager for Veratype in Warren, N.J., and his wife (**Cyndi Ziska**, '77) works as a computer technician.

Steven Allen David is living in Dallas, Texas, where he is a landscape architect.

Kenneth M. Fox has been promoted to assistant vice president of First Interstate Mortgage Co. in San Francisco.

Steven Greer is now materials manager at Hewlett-Packard in Corvallis. His business responsibilities have required visits to Hong Kong and Singapore.

Katherine Dellett Hammack is a marketing engineer for the Skinner Valve Co. of New Britain, Conn. She and her attorney husband, **Timothy L. Hammack** live in Burlington, Conn.

Deborah Sether is regional marketing manager for Alpine Data Systems in Portland.

Stephen W. Griffith of Lake Oswego is associate project manager at Decision Dynamics.

Brad M. Wolverton is the co-owner of a small property management company, JBK Properties, in Portland.

John H. Woodard, who is admitted to practice law in both Oregon and Washington, is a lawyer with Perkins & Cole in Portland.

'81

Kirk Mitchell Balin is temporarily living in Lubbock, Texas, while training as a pilot for the U.S. Air Force Reserves. He and his wife (Ann Gilbert,'83) will be returning to Oregon in 1987.

Timothy K. Vance graduated May 26 from Yale University's Divinity School with a master of divinity degree and has accepted the position of chaplain at Trinity Preparatory School of Florida in Winter Park.

'82

Julie Crawford Carns and her husband, David W. Carns, '74, have moved to Ellensburg, Wash., where she will work at Kittitas Valley Community Hospital, and he will be an assistant professor of construction management at Central Washington University.

Kurt Barats has been promoted to purchasing supervisor at Hewlett-Packard in Boise, Idaho.

Mary Jo Allen is now supervisor of financial analysis and production accounting at ITT Rayonier, Inc., in Port Angeles, Wash.

Greg Budreau of Salem is working as a systems analyst for the Oregon Department of Revenue.

Joseph F. Chong is a senior mechanical maintenance engineer in a new 900 MW Power Station, Lembaga Letrick Negara, in Malaysia.

Barbara L. Keihle has been appointed director of promotions at KMVT Television, a CBS affiliate, in Twin Falls, Idaho.

David P. Cook is a CPA and computer audit specialist for the Salt Lake City office of Arthur Young & Company.

Paula Coulter lives in Caldwell, Idaho, where she works as administrator of the Family Medical Clinic, P.A.

Joyce Dickerson has been promoted to senior insurance consultant and manager of the Corvallis office of SAIF Corporation.

Lt. Cdr. Thomas L. Hagen is operations officer for the 800-person squadron aboard the USS Enterprise homeported at Oak Harbor, Wash.

Charles M. Michel is employed as an engineer for the Standard Alaska Production Co. in Anchorage.

Steven G. Price is conference and seminar coordinator for the International Trade and Commerce Institute in Portland.

Bruce Shaw was recently promoted to assistant manager of commercial credit at Arthur Andersen & Company in Vancouver, British Columbia, Canada.

Kathleen Shelton lives in San Luis Obispo, Calif., where she is assistant branch manager for the San Luis Obispo Production Credit Association.

'83

Brian Gerard Heintz is a mechanical engineer at Tektronix, Inc., in Beaverton, and his wife, Natasha Slangal, '84, is a housewife.

Robert Vandehey has been promoted to art director/designer at Michael-Patrick Advertising and Design in San Mateo, Calif. He was responsible for ten awards received by Michael-Patrick last year.

Teresa Goss is a new employee of P & M Cedar Products, Inc., as quality control analyst in the Specialty Remanufacturing Department in McCloud, Calif.

David P. Burger is employed as specialty products coordinator for the H.J. Heinz Company of Canada in Leamington, Ontario, Canada.

Michael Blackman has been promoted to senior management consultant for Price Waterhouse, Management Consulting Services. He transferred from Seattle to the San Francisco office in July.

Catherine Babnick is working as an accountant for the U.S. Postal Service in Portland.

Jerry Buccola is now a buyer/manufacturing for Hewlett-Packard in Everett, Wash.

Richard Costa of Anchorage, Alaska, is a senior accountant for Peat, Marwick, Mitchell & Company.

Laura Graham has been promoted to marketing representative for International Business Machines in San Jose, Calif.

William T. Nelson works for Air Products & Chemicals, Inc., in Albany and he is also a part-time small business counselor for the Small Business Development Center at Linn-Benton Community College.

Ichiro Ota, executive director of Nippon Kores K.K. in Osaka, Japan, was co-author of an article which appeared in Diamond Harvard Business, July, 1985.

Ann Shirree Reynolds of Everett, Wash., is working as an industrial engineer for Honeywell Marine Systems Division.

'84

Ellen J. Bartsch of Portland is manager of the Cartographic Center at Portland State University.

Mark Curtis Waldroop works as a salesman at Nordstrom's Lloyd Center store in Portland, and his wife (Darcene Jackson) is assistant manager at Binyon Optical Company there.

Jeannette Johnson, who has been at San Jose de Copan in Honduras for a year with the Peace Corps, is currently coordinating a building effort to remodel a building used as a center for malnourished children.

Chris Kennedy, who received an additional degree in medical technology from OSU in June, and his wife both work as medical technologists at Skagit Valley Laboratories and Blood Bank in Mt. Vernon, Wash.

Jonathan Frazier Beck is employed as a service representative for Software Support Services in Corvallis.

Ensign Kenneth J. Conner has been commissioned in his present rank upon graduation from Officer Candidate School at the Naval Education and Training Center in Newport, R.I.

David C. Jordan, who lives in North Bend, is employed by Roseburg Lumber Company in Coquille as part of their quality control program.

Margot Buckley Cougill is a budget analyst at the U.S. Federal Reserve Bank in Denver, Colo.

Michael Davis has been promoted to district manager for the state of Arizona for Toyota Motor Sales, USA. He and his family live in Englewood, Colo.

Crystal Crump of Kansas City, Kan., was recently transferred to finance from personnel by Hallmark Cards, Inc.

Bodie Dickerson is an instructor in the College of Business at OSU in Corvallis.

David Dillenburg is responsible for the merchandising activities of five distribution centers involving over 22 sales representatives for Zellerbach Paper Company in Portland.

Alex Dunnette is product manager for Vectra Technical Personal Computers in the Marketing Department of Hewlett-Packard in Corvallis.

Tim Gillman has been promoted to administrator from route sales representative for Orowheat Foods in Seattle.

Judith Good is self employed at her growing tree service/landscaping business, J.B. Good, Inc., in Corvallis.

Mark Kasperick is working for the Defense Contract Audit Agency in Salt Lake City, Utah.

Carolyn H. Vock has been promoted to marketing representative for International Business Machines in Toledo, Ohio.

'85

Gale E. Getman is working as a bilingual secretary in the Personnel Department of the Crown Plaza Hotel in Los Angeles, Calif.

Jeffrey T.A. Youngbluth, who is currently assigned as a pararescueman with the 304th Aerospace Rescue and Recovery Squadron in Portland, has been promoted to the grade of Technical Sergeant as an Air Force Reservist.

Heidi Rau finished a management training program with the Hyatt Hotels Corporation at the Hyatt on Union Square in San Francisco and was named assistant front office manager there in May.

Teri Wheeler is currently working on a master of history degree at the University of California at Irvine.

Randy Kee is due to graduate soon from navigator training at Mather AFB, Calif. His wife is the former Kim Johnson, '84.

Tamara S. Somerville has moved from Salem to Alexandria, Va., where she is employed with the Times Mirror Corporation.

Kenneth S. Brinster has been working for the Container Corporation of America in Renton, Wash., since 1985.

Glenn A. Dickson lives in Charlotte, N.C., where he works at the Phi Kappa Phi Fraternity Administrative Offices.

MARRIAGES

Victor J. Giglio, Jr., and Kimberly Neuffer, '85; May 24 in Hermiston.

Mark Paul Hettum, '83, and Beverly Lynn Haney; May 17 in LaJolla, Calif.

Russel James Repp and Michelle Marie Meurlott, '83; July 12 in Lake Oswego.

Thomas Gibbs and Linda Tofte, '81; June 27 in Portland.

Michael Raymond Rogers, '84 and Elizabeth Ann Fulton, '86; May 31 in Corvallis.

James R. Langley, '81, and Marie Domench; June 14 in Stockton, Calif.

Bryan Donald Smith, '85, and Lisa Marie Edwards, '85; June 21 in Portland.

Rob Crawford, '85, and Krista Selene Willis; July 12 in Portland.

Thomas Allen Byers and Rhonda Rae Flatz, '82; May 31 in Corvallis.

Patrick Mernaugh and Kristy Cortese, '83; June 21 in Portland.

David Arthur Vaughan and Sherri Marie Petersen, '85; June 21 in Portland.

Cameron Keith Neal and Abbe Jo Smith, '84; June 13 in Portland.

Richard Charles Steinmetz, '83, and Marie Annette Birskovich; July 12 in Portland.

Glen J. Hodgson, '83, and Julia A. Machacek; June 27 in Gladstone.

Thomas J. Ruggles and Linda Gilstrap, '81; June 14 in Portland.

Philip Plattner and Peggy Broehl, '74; June 21 in Portland.

Baydu Han Ilhan, '84, and Lori D. Windsor, '86; June 15 in Portland.

James S. Barr and Tina Moran, '82; May 17 in Tujunga, Calif.

Daniel Kyle Bynon, '79, and Patricia Mae Schulte; June 28 in Portland.

Christopher Riley Morgan and Lori Jane Rhodaback, '85; June 21 in Portland.

Richard James Kaplan, '81, and Karmann Lange; May 31 in Seattle, Wash.

John Ivezic, '81, and Barbara Ann Cochran; June 14 in Portland.

Eric S. Erkenbeck, '82, and Kristine M. Johnson; June 7 in Portland.

Robert Thornton, '78, and Ruth Stewart; June 7 in Portland.

Mike McKelvey, '83, and Terry Leyden; June 28 in Portland.

Steve W. Mock, '83, and Mary Joanne Knower, '80; July 19 in Corvallis.

Kirk James Daley, '85, and Debra Colleen Jones, '85; 1986 in Medford.

Eric Conway Thompson, '85, and Carrie Sue Dale; June 21 in Lake Tahoe, Nev.

Steven Robert Elkjer, '85, and Laurie Lee Kirkland, '86; June 21 in Corvallis.

Stephen Paul Hughes, '86, and Sharon Mah; June 14 in Portland.

Daniel Albert Dubay and Mary Beth Williams, '86; June 7 in Portland.

Kevin Thomas Kious and Sharon Marie Frid, '86; July 19 in Portland.

David Pinyerd, '86, and Laura Clifford, '86; June 14 in Portland.

Mark Allen Phillips, '86, and Amy Elizabeth Huber; May 24 in Lake Oswego.

John Peter Evers, '86, and Lisa Relene Trumbo; June 7 in Aloha.

Craig Barton Nelson, '86, and Monica Lee Witt, '86; July 26 in Tualatin.

Steve Woodside and Marianne Lanzarotta, '86; May 3 in Corvallis.

Joseph Michael Ryan, '86, and Soni Lee Sandhu, '86; June 6 in Albany.

Roger Bertram Grinde, '86, and Michelle Marie Harris; June 20 in Corvallis.

Stephen Wesley Cole, '85, and Amy Adele Matzinger, '84; July 5 in Boise, Idaho.

Roger Phillip Martin, '84, and Tamara Rae Thompson; May 24 in Portland.

Larry Wood and Kimberly Larsen, '83; Feb. 8 in Forest Grove.

Richard Elden "Chip" Carter, '78, and Marie Rose Rousseau; May 10 in Portland.

Barry Daniel Reeves, '86, and Molly Alice Boyer, '84; April 12 in Corvallis.

Mark Hansen, '84, and Kathryn Hornecker, '84; June in Gold Hill.

W. Boyce F. Smith, '74, and Lori Lynn Hatton; May 10 in Portland.

Douglas Stanton and Diana McNutt, '80; Dec. 28 in Portland.

Jonathan Friedman and Sonja Nielsen, '83; May 25 in Beverly Hills, Calif.

Brian H. Walker '85, and Shannon Miller, '86; June 21 in Portland.

Erick Petersen, '85, and Jennifer Seeman, '86; June 21 in Corvallis.

Jim Harbolt, '84, and Monica Haunold, '84; May 10 in Corvallis.

Tony Lewis Walters '82, and Maureen Elizabeth Sergent, '81; Mar. 22 in Sacramento, Calif.

Michael E. Goulet and Marcelle E. Pontier, '85; May 31 in Portland.

Todd Thomas Sherer, '85, and Allison Marie Lee; April 5 in Ione.

Michael Patrick O'Loughlin, '85, and Monika Elizabeth Torrey, '86; May 10 in Beaverton.

Mark A. Manion, '85, and Julie M. Janes, '86; May 31 in Beaverton.

David Lyle Smith, '85, and Lai Wan Wong, '86; May 24 in Clackamas.

Michael Vincent Fisher and Heidi Gayle Miller, '85; Mar. 29 in San Diego, Calif.

Michael Louis Ceciliani, '79, and Deborah Jane Simmonds, '80; May 24 in Fallbrook, Calif.

James Glen Bixby, '85, and Tammy Lynn Phillips, '85; June 14 in Portland.

James Grammel, '86, and Lynette Deetz, '85; May 31 in Forest Grove.

Larry D. Grippin, '85, and Patricia A. Glavine; April 5 in Dallas.

Stevan P. Hanford and Cicely Hand, '75; April 5 in San Francisco, Calif.

Gale McKnight and Jean E. Albaugh, '76; May 3 in Portland.

Chris Kennedy, '84, and Cathy Armknecht; June 14 in Mt. Vernon, Wash.

Ronald Lee Brandt and Cynthia Marie Peschka, '84; May 10 in Verboort.

Lee Benjamin Phillips, '86, and Julia Anna Epperly, '84; March in Salem.

Wayne Lee Fish, '82, and Tammy G. Matteson; April in Norwich, Conn.

Grant Irvin Kistler and Terri Lynn Wickwire, '80; Mar. 8 in Longview, Wash.

Richard Sterling Hodgson, '79, and Roberta Dawn Beck; April 19 in Portland.

Robert J. Peterson Jr., '77, and Suzanne Henas, '83; May 3 in Corvallis.

Michael O'Brien and Linda Julin, '82; Mar. 22 in Astoria.

Russell Roger Reid, '84, and Tamera Ann Bechen; May 10 in Corvallis.

Dale Joseph DiLoreto, '83, and Mary Catherine Talbott, '86; May 10 in Portland.

Frank C. Hall, '84, and Karee Brooke Kerfoot, '83; Mar. 29 in Bend.

In Memoriam

Ivy Burton Robinson Thomas, '01, of Independence; June 8 in Independence.

Grace Lowell McCarthy, '04, of Portland; Aug. 12 in Portland.

Lota Peck Callaway, '10, of Morgan Hill, Calif.; May 17 in Morgan Hill.

Anne Sweeney Day, '15, of Portland; June 17 in Portland.

Cecile Lilly Templeton, '15, of Portland; 1986 in Portland.

Esther Plank Dickerson, '16, of Indianapolis, Ind.; Jan. 2 in Indianapolis.

Vida Carlson Whiteside, '16, of Fullerton, Calif.; Aug. 3 in Fullerton.

Gladys Rogers Walton, '17, of Prescott, Ariz.; April 16, 1975 in Prescott.

Lula May Brandt, '18, of Orange City, Fla.; 1986 in Orange City.

William Sidney Cole, '18, of Portland; June 8 in Portland. He was affiliated with KS.

Myrle Yexley Arnold, '21, of Lacey, Wash.; May 17 in Lacey.

Bessie Biehler Kolton, '22, of LaCanada, Calif.; Oct. 13, 1983 in Glendale, Calif.

Laurie Paul Lind, '22, of Portland; May 22 in Portland.

Rudolph John Hillstrom, '23, of Coos Bay; April 19 in Coos Bay.

Hazel Williams Gill, '24, of Corvallis; Aug. 9 in Corvallis. She was affiliated with AOP.

Florence Gradon Ragen, '24, of Portland; July 18 in Portland.

Arthur Valentine Walker, '24, of Lacey, Wash.; April 15 in Lacey. He was affiliated with DSP.

Henrietta Eckstein Fulkerth, '25, of Gleneden Beach; Dec. 15 in Red Bluff.

Zenda Hendrickson Sanders Milloy, '25, of Salem; Aug. 1 in Salem. She was affiliated with DZ.

Jay William Thurswton, '25, of Carmichael, Calif.; Aug. 24, 1984 in Sacramento, Calif.

Helen Brosi Battey, '26, of Emmett, Idaho; April 14, 1985 in Emmett.

Lindley Fowler Bothwell, '26, of Woodland Hills, Calif.; June 19 in Sherman Oaks, Calif. He was affiliated with SAE.

Edward North Dunn, '26, of Moscow, Idaho; June 2 in Moscow.

Blair Everett Plowman, '26, of Spokane, Wash.; May 6 in Yuma, Ariz.

Noah Hartman Truax, '26, of Oakland, Calif.; April 18 in Oakland.

William Delbert Koehler, '43, of Beaverton; July 15 in Beaverton.

Carolyn Smith Walton, '43, of Germantown, Md.; Jan. 16 in Germantown.

Clair Frazier Young, '43, of Portland; May 1 in Portland.

John Hetrick, '46, of Port Angeles, Wash.; July 11 in Port Angeles. He was affiliated with PSK.

Thomas George Marshall, '47, of Santa Barbara, Calif.; July, 1985 in Roseburg.

Colleen Dougherty Filz, '48, of Portland; July 5 in Portland. She was affiliated with AXD.

Clyde B. Gleason, '48, of Corona, Calif.; Jan. 6 in Corona.

Ralph Armin Wiese, '48, of Roseburg; Oct. 30, 1985 in Roseburg.

Vernon Paul Payne, '51, of Stockton, Calif.; Oct. 29, 1985 in Stockton.

James Lear Riggs, '51, of Corvallis; May 19 in Corvallis. He was affiliated with TX.

Duncan Walthall Brinkerhoff, '52, of Mt. Shasta, Calif.; Mar. 18 in Medford.

FACULTY AND FRIENDS

Harry Lincoln Pope, who operated the College Hill Barber Shop on Monroe Street from 1925 until his retirement in 1967; June 30 in Corvallis.

John A. Pfanner Jr., who taught in the School of Business at OSU until his retirement in 1971; April 29 in Rancho Bernardo, Calif.

Velda Dotson Mullins, who worked for the Department of Agriculture and OSU as a secretary for more than 25 years; June 10 in Denver, Colo.

Sports Shorts

Football Recaps

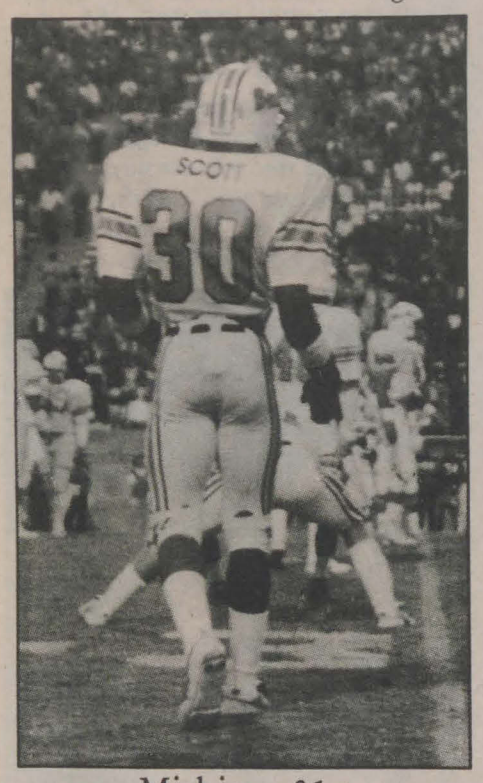
Fresno State 27, Oregon State 0

Compare it to a big date you've looked forward to for three weeks and then you get jilted hours before the dance starts. Grand expectations for the OSU season opener at Fresno State took a swift kick in the mid-section as the Bulldogs' pass rush greeted the return of Erik Wilhelm right at the point of his drop back and shutout the Beavers, 27-0.

Two early OSU drives ended in field goal attempts that malfunctioned. Once Fresno State established a touchdown advantage, the Bulldog defensive line pinned their ears back and set sail for Wilhelm and his third quarter substitute Dave McLaughlin to the tune of 10 sacks.

"I thought we were ready," said head coach Dave Kragthorpe in retrospect. "I was disappointed in many facets of our game. Our pass protection was very poor and our offense in general was very disappointing. I thought we should have had at least 10 points in the first half and then we would have had a dog fight. If there was a positive side, we played hard and didn't let up on defense in the fourth quarter when they still had their starters in the game."

Heeding the danger of Fresno's big play offense, the Oregon State defense didn't give up the large chunks of yardage. A lack of offensive output, simply put the defense out on field much too long.



Michigan 31, Oregon State 12

Wolverine coach Bo Schembechler used Oregon State's 1985 upset of Washington as an example of what the Beavers were capable of throughout the week of pre-game hype. Second ranked Michigan survived a comparable effort, but not before OSU took them to the fourth quarter and gained the respect of 104,748 donning blue and gold, the largest crowd to ever witness an OSU football game. The 31-12 final didn't do justice to a sound, exhaustive Beaver effort.

Wilhelm, in only his sixth start as a Pac-10 quarterback, riddled one of the nation's stingiest defenses in recent years with the nickel-and-dime passing attack. That loose change mounted into numbers that eclipsed an OSU record for completions with 39, a Pac-10 record for attempts with 64 and still another assault on the OSU book that fell just short with 339 yards through the air.

"There are no moral victories," cautioned Kragthorpe after his Express gained Big-10 admiration. "You just feel better about some games than others."

It took a lot to get our guys to feel good about themselves coming off the Fresno performance. I feel good about this football team today."

Other notable efforts from the Ann Arbor affair included a pair of Wilhelm's targets, Dave Montagne and Damon Medlock, with 10 and eight catches, respectively. The Beaver offensive line and backfield teamed to improve pass protection by leaps and bounds. Michigan quarterback Jim Harbaugh had high praise for the OSU defensive line and Kevin Scott's early interception ended a 149-pass streak without a theft by the Wolverines' Heisman Trohpy candidate.

Pac-10 Scandinavian Tour

They started out dubbing the team the Pac-10 All-Star Team. When it appeared that the roster would be filled out with something less than an all-conference lineup, the title was watered down to be pac-10 Summer Tour Team. Finally, when Ralph Miller and his assistants, Don Monson of Oregon and Miller's own Jimmy Anderson, accepted the reins on these kids just one week prior to their eight-game August excursion through Scandinavia, OSU's head coach affectionately tagged them the Pac-10 Developmental Team.

Perhaps the tongue-in-cheek demotions in rank disturbed this newly formed group, because, under Miller's guidance, it vacationed through Norway, Sweden and Denmark without a loss. Not even a thriller.

Apprehensive about how this team would do after better Pac-10 contingents had been thrashed about Russia and Australia in the two previous years, Miller breathed easier when the team breezed by its opener, 97-61, behind Jack Haley of UCLA. Playing the better club sport franchises in Oslo and Bergen in Norway, Malmo and Helsingborg in Sweden and a finale in Copenhagen, Denmark, the Pac-10ers averaged 107 points, while yielding only 67.

Miller's squad was made up of Haley, Steve Beck and Bobby Thompson of Arizona State, Craig McMillan and Eric Cooper of Arizona, Phil Zevenbergen of Washington, Cal's Jeff Huling, Greg Butler of Stanford, Keith Balderston of Oregon and Washington State's Dwayne Scholten. Oregon State, other than its coaching staff, and USC were not represented on the squad.

Basketball Adds Recruit, Ticket Policy Changes

Santa Ana Valley High School's Alonzo Jamison has announced his intentions to enroll at Oregon State University and play basketball.

Jamison, 6-6 and 215 pounds, was a two-time first team All-Century League selection for head coach Tom Reich averaging 18.2 points and 11.8 rebounds. He was a second team pick as a sophomore. Jamison earned all-county honorable mention this past year and, for the second straight year, was the team's MVP.

With the national letter-of-intent period for 1986-87 men's basketball already expired, Jamison made his intentions official with the signed acceptance of financial aid from OSU.

"Alonzo is a strong, very quick inside player and he'll help our interior game a great deal," said assistant coach Jim Anderson of OSU's latest recruit. "He needs to improve his ball handling skills and outside shooting to fit our needs at small forward, but his instincts for the game are such that we feel he will make the necessary adjustments."

He joins six other newcomers to a revamped Orange Express. Included among the newcomers are fall signees Gary Payton and Fernando Borcel and spring announcements Brian Brundage, Shawn Freeman, Peter Centen and Allan Celestine.

The team won't be the lone new look to the Gill Coliseum atmosphere when the Orange Express embarks on the 1986-87 home basketball schedule.

Alterations to ticket policy have enabled a select number of students to have courtside seats, adding to the intimidation factor in the east end zone. The general public will have an early shot at a new season ticket package within the north balcony, and choice seating for prioritized Beaver Club membership has been expanded.

For years now the only school without a student courtside seat, Oregon State will be able to add to the decibel level of Gill with some choice student seating adjacent to the OSU band.

In an effort to make north balcony seating more accessible to Orange Express fans, a 13-game season ticket package is available for the first time in 1986-87. The $125.50 offer includes the entire home schedule except the Dad's Weekend affair Jan. 31 against California.

Orders are being accepted and will be filled on a first-come, first-served basis after the October 10 student deadline for season package purchases. The seating is in sections 9-15 and DD of the north upper balcony and its availability will be determined on an annual basis by the amount of pre-season student sales.

Priority seating for Beaver Club membership has been extended to northwest balcony. Additional seating for $75-$400 Beaver Club donation levels is being offered in sections nine and 10.

One other note concerning the 1986-87 tickets: the Civil War Alumni basketball game will be played as a preliminary to the home game vs. the contemporary Ducks. The $2.00 cost of the Alumni affair is built into the price of the Oregon-Oregon State tickets.

New Look High Hopes, For 1986 Cross Country

The fall of 1986 will bring on the usual high hopes for Oregon State cross country. There is a new look, though, as this season's edition could be a legitimate contender for honors in the Pac-10. With a new coach (who has not officially been named at this writing), some key returning letter winners and some good-looking recruits, this may be a year to remember.

The men will once again feature the running talents of Karl Van Calcar. In typical fashion, Van Calcar finished in the top ten in every race he ran last year. He also holds the Oregon State record in the steeplechase. Last year, he was red shirted in track due to an irritated Achilles' tendon, but he is expected to be 100 percent for cross country.

Kevin R. Morris

Karl Van Calcar

The coaching staff went overseas to recruit this year and came up with Orjan Henstrom from Sweden and Stewert Trost of Australia. Henstrom is a steeplechaser with a best time of 8:38 in that event. Trost, a 1500 meter runner, has a best of 3:53. Both are expected to have a strong impact on this team.

Other newcomers include Telly Ebba, brother of Oregon State's mile record holder Hailu, and Cary Brady, a transfer from Mt. Hood Community College.

The women's edition of cross country will feature a veteran core of Sue Martineau, Peggy Murri, Heather Cusack and Kristin Schaefer.

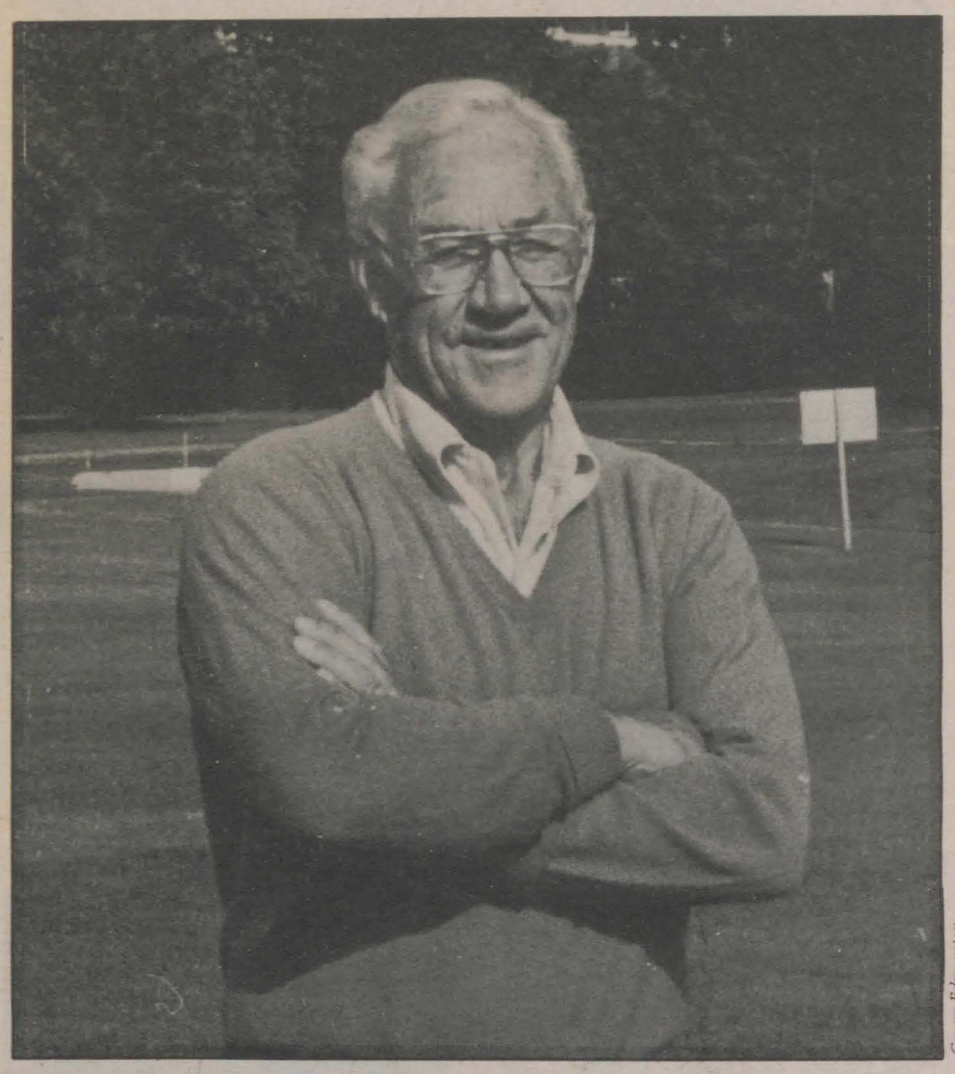
Murri and Martineau are two seniors who have six years of varsity experience between them. Martineau had an excellent freshman campaign, but injuries and illness have slowed her the past two years. Her potential is there and she could be the pacesetter of this team. Murri started living up to her potential last year as she led the team in the final four races last season.

The other returners are Cusack, a junior, and Schaefer, a sophomore. Both made surprising contributions last year and the coaching staff expects them to improve with experience.

The top newcomers are Monica Mayer, a 5,000 meter runner, and Sara Thomas, a freshman. Mayer, in particular, could push for the fifth spot on this team, if she can avoid the injuries that kept her out last year.

Where Are They Now?

Hal Moe '32



George Edmonston

For fans of Oregon State University sports, talking to Hal Moe is a treat.

Still physically fit at 76, Moe plays golf, is a member of Corvallis' Timberhill Racquet Club and has a speed punching bag in a room off his deck. In that same room, Moe has some memorabilia like a picture of Knute Rockne and Paul Schissler, Moe's coach at Oregon State during the early thirties, a picture of the reunion of the 1942 Rose Bowl team, and a plaque commemorating his induction into the Oregon Sports Hall of Fame — pictures and plaques that illustrate how his sports career at Oregon State has spanned over three decades.

Inducted into the Oregon Sports Hall of Fame in 1982, Moe was a star halfback for the Beavers from 1930-32 and won All-Coast honors his senior year. He later was an assistant coach when OSU won the 1942 Rose Bowl.

During his 35 years of service to OSU, Moe was an assistant football coach from 1934-42 (Lon Stiner) and 1949-1954 (Kip Taylor), was OSU's track coach from 1952-58, and has coached golf and bowling as well as teaching physical education courses for twenty years. Over the years, Moe has been involved with some of OSU's greatest teams.

Moe's career at Oregon State began in 1929 when he first came to Corvallis from Great Falls, Montana. He was going to attend Washington, actually spending some time in Seattle, but things didn't work out and when he visited Corvallis he decided to stay.

"I liked the atmosphere (at OSU) and the coaching staff," said Moe. "The people were very nice and they made me feel at home. I never regretted coming here. I liked it so well, I've been here most of my life."

Indeed, Moe has spent most of his life in Corvallis and it's been to OSU's advantage.

After finishing up a fine football career at Oregon State, Moe was drafted by the Boston Redskins. His college coach, Paul Schissler, had become the head coach of the Chicago Cardinals and traded a player to get his old college halfback. Moe played only one year before a Schissler assistant, Lon Stiner, asked him to return to Oregon State to be an assistant coach.

Moe assisted Stiner for eight years and then right after the Beavers' 20-16 victory over Duke in the Rose Bowl, Moe went into the service for four years, spending some time in the South Pacific.

After his time in the service, Moe came back to the states and was the head football coach at the University of Portland from 1946-48, until Portland dropped football. Moe then returned to OSU and was an assistant to Kip Taylor from 1949 to 1955.

"Going to the Rose Bowl was one of the big thrills in my lifetime — being on the coaching staff," said Moe. "Beating Stanford in Corvallis, 12-0, was a big game that year because they were undefeated the year before. Without that game we wouldn't have gone to the Rose Bowl."

Moe explained how the good teams don't always have the best talent.

"A lot of football is just having the right group together," says Moe. "You don't have to have a bunch of all-stars. The players just have to have great respect for one another. That was one thing we had on that Rose Bowl team. They had a feeling that they were going to win all the way through.

"I've enjoyed the kids I've had," said Moe. "But, I don't think winning's the big thing. I understand that you have to win (in coaching) but it's not always how much ability a kid has, it's how hard they're trying to be a good player. . . how close they come to their potential. Those are the things you remember. I don't just remember the stars."

PAC-10 Rookie Year For OSU Women

In the past, it has been "the dream." In the future, it presents "the challenge."

Uniformity has reached intercollegiate athletics at Oregon State as, effective in the fall of the 1986-87 school year, the women have joined the men's programs in the Pacific-10 Conference.

The men have, of course, been part of the conference since 1964, and it reached its present 10-team status with the addition of Arizona and Arizona State in July of 1978. The women's latest affiliation was with the Northern Pacific Athletic Conference, or NorPac, from 1983 through this past year. The NorPac consisted of Pac-10 schools OSU, Oregon, Washington, Washington State and California as well as Fresno State, San Jose State and University of San Francisco.

"It is something we've been dreaming about for some time," said women's basketball coach Aki Hill, speaking for most all of the women's coaches at OSU. "First of all, it enables us to bring in some very attractive teams to our home schedule. And within a tough conference, you can't help but grow."

Gymnastics coach Jim Turpin echoed Hill's sentiments, "Seven of the eight schools that will be involved in gymnastics are ranked in the Top 20, so we will have an excellent idea of where we stand nationally even before regional and national competition. The talent level will be so great that the Pac-10 championship itself has some definite television possibilities."

The Top 20 caliber competition doesn't stop there; volleyball coach Tino Reyes knows what he's up against in year one. "We have three of last year's final four in our conference, and Arizona State is returning most of their squad. The difference between the Pac-10 and NorPac is like night and day."

Cross country, track and field, swimming, softball, crew and golf — they all have their work cut out for them against nationally ranked competition.

Swim coach Laura Baumhofer has assumed the duty of OSU's representative for women's athletics with the conference office. Baumhofer is equally optimistic about the fortunes of the women's programs in the conference. "To see the women become part of the Pac-10 is a real asset. I think it presents a real opportunity for more publicity and recognition for the women."

Much of the women's basketball schedule will resemble the men's itinerary, thus cutting down on potential traveling costs. Unlike baseball, which has split the conference into Northern and Southern Divisions, softball will carry a full Pac-10 schedule. But, even for softball, traveling expenses aren't expected to increase dramatically, since the Beaver program already makes annual excursions to Arizona and California.

As Turpin points out, the scheduling for gymnastics is ideal. "They did an excellent job of scheduling. Each school faces the rest of the conference at least every other year on a home-and-home basis."

All things considered, the only drawback is in the preparation.

"It is not the best time to be jumping in, since we are not coming off a very good year," Hill elaborated. "But, in the long run, it will be good for us. I see us starting in a tough situation and working up. We'll accept the challenge. We're actually excited about it."

"For our beginning season in the Pac-10," said Reyes, in his second year with volleyball, "I'd like to see us in the middle of the pack. Some people might look at that statement and say 'what kind of goal is that?' But with the competition we're facing, we've got to be realistic about our goals."

The dream is reality. The challenge is ahead.

Volleyball Enters Life In Pac-10

With only one senior on an already young team, second-year coach Tino Reyes has his work cut out for him. In addition to having a young squad (one senior, five juniors, two of which are junior college transfers, four sophomores and two freshmen), his Beavers are entering their first year in the Pacific 10, a conference that will have three of last year's top four teams in the nation; Stanford, USC and UCLA.

"For our beginning season in the Pac-10, I'd like to see us in the middle of the pack," said Reyes. "Some people might look at that statement and say 'what kind of goal is that,' but with the conference we're in, we've got to be realistic about our goals. We have three of the final four teams at nationals in our conference and Arizona State is returning just about everyone.

"I definitely like the conference, though. I wish we didn't have to jump into it until next year. We don't make that decision and you have to play with what you got."

Even though the Beavers are a young team, they are returning five members, all who saw considerable playing time last year, and they return to help OSU improve on last season's 13-19 overall record.

Steve Shields

Merri Walters

Gone from last year's team will be Amy Brown, Susie Swanson, Ronelle Iwaoka, Kathie Baird, Heidi Hakala and Lisa Madrid. Brown, Swanson, Hakala and Madrid were all valuable members of last year's team. Swanson was second on the team last season in kills (254) and third in hitting percentage and digs (155). Brown ended her career second on the team with 173 digs. For her career, Brown is in the top ten of the OSU volleyball record books with 295 kills and 57 blocks.

(Continued on page 31)

Schedules

1986
Football Schedule

Day	Date	Opponent	Location	Time
Sat.,	Oct. 18	Arizona	Tucson, AZ	6:30 MST
Sat.,	Oct. 25	Boise State	Corvallis	1:30 PDT
Sat.,	Nov. 1	UCLA	Portland	1:30 PST
Sat.,	Nov. 8	Washington	Corvallis	1:30 PST
Sat.,	Nov. 15	Brigham Young	Provo, UT	12:00 MST
Sat.,	Nov. 22	Oregon	Corvallis	1:30 PST

1986
Junior Varsity Football Schedule

Day	Date	Opponent	Location	Time
Thurs.,	Oct. 16	Yakima	Corvallis	6:00 p.m.
Mon.,	Oct. 27	Western Oregon JV	Corvallis	7:00 p.m

1986-87
Men's Basketball Schedule

Day	Date	Opponent	Location	Time
Wed.,	Nov. 12	Norwegian National Team	Corvallis	7:30 p.m.
Sat.,	Nov. 29	UTEP	El Paso, TX	1:00 p.m.
Fri.,	Dec. 5	UC-Santa Barbara	Corvallis	7:30 p.m.
Sat.,	Dec. 6	Portland	Corvallis	7:30 p.m.
Thurs.,	Dec. 11	Puget Sound	Corvallis	7:30 p.m.
Sat.,	Dec. 13	Gonzaga	Spokane	7:30 p.m.
Sun.,	Dec. 21	* California	Berkeley	7:30 p.m.
Tues.,	Dec. 23	* Stanford	Palo Alto	7:30 p.m.
Fri.-Mon., December 26-29, 31st Fred Meyer Far West Classic, Portland, Oregon				
Fri.,	Dec. 26	Oregon vs. Southwest Louisiana		7:00 p.m.
		San Jose State vs. Mississippi State		9:00 p.m.
Sat.,	Dec. 27	Oregon State vs. Idaho		7:00 p.m.
		Louisiana Tech vs. Washington		9:00 p.m.
Sun.,	Dec. 28	Semifinals		1, 3, 7 & 9:00 p.m.
Mon.,	Dec. 29	Finals		1, 3, 5, 7 & 9:00 p.m.
Fri.,	Jan. 2	* Arizona	Corvallis	7:30 p.m.
Sun.,	Jan. 4	* Arizona State	Corvallis	3:00 p.m.
Sat.,	Jan. 10	* Oregon (Raycom TV)	Corvallis	1:00 p.m.-TV
Thurs.,	Jan. 15	* USC	Los Angeles	8:00 p.m.
Sun.,	Jan. 18	* UCLA (Raycom TV)	Los Angeles	3:00 p.m.-TV
Thurs.,	Jan. 22	* Washington State	Corvallis	7:30 p.m.
Sat.,	Jan. 24	* Washington (NBC-TV-Regional)	Corvallis	2:00 p.m.-TV
Thurs.,	Jan. 29	* Stanford	Corvallis	7:30 p.m.
Sat.,	Jan. 31	* California (Raycom TV)	Corvallis	3:00 p.m.-TV
Thurs.,	Feb. 5	* Arizona State	Tempe	6:30 p.m.
Sun.,	Feb. 8	Chicago State	Corvallis	12:30 p.m.
Thurs.,	Feb. 12	* Oregon	Eugene	7:30 p.m.
Sat.,	Feb. 14	* Arizona (NBC-TV-Regional)	Tucson	3:00 p.m.-TV
Thurs.,	Feb. 19	* UCLA	Corvallis	7:30 p.m.
Sat.,	Feb. 21	* USC (Raycom TV)	Corvallis	3:00 p.m.-TV
Thurs.,	Feb. 26	* Washington State	Pullman	7:30 p.m.
Sun.,	Mar. 1	* Washington (Raycom TV)	Seattle	1:00 p.m.-TV
Thurs.,	Mar. 5	Pac-10 Post-Season Tournament	Los Angeles	TBA
Fri.,	Mar. 6	Pac-10 Post-Season Tournament	UCLA	TBA
Sat.,	Mar. 7	Pac-10 Post-Season Tournament	UCLA	TBA
Sun.,	Mar. 8	Pac-10 Post-Season Tournament	UCLA	TBA
Trs.-Fri.,	Mar. 12-13	NCAA First Rounds		
Sat.-Sun.,	Mar. 14-15	NCAA Second Rounds		
Trs.-Sun.,	Mar. 19-22	NCAA Regionals		
Sat.-Mon.,	Mar. 28-	NCAA Finals — Louisiana Superdome, New Orleans, LA		

(All times listed at Pacific Standard Time and are subject to change)
* Indicates Pacific-10 Conference Game

1986-87
Women's Basketball Schedule

Day	Date	Opponent	Location	Time
Tues.,	Nov. 25	Australian National Team	Corvallis	7:30 p.m.
Fri.,	Nov. 28	Big "O" Tournament	Corvallis	
		OSU vs. Iowa State		7:00 p.m.
		San Diego State vs. Texas Tech		9:00 p.m.
Sat.,	Nov., 29	Big "O" Tournament Finals		7/9 p.m.
Sun.,	Dec. 7	Long Beach State	Corvallis	1:30 p.m.
Wed.,	Dec. 10	Boise State	Corvallis	7:30 p.m.
Sat.,	Dec. 13	Portland	Portland	5:15 p.m.
Fri.,	Dec. 19	New Mexico	Albuquerque	
Sat.,	Dec. 20	S.W. Texas	Albuquerque	1:00 p.m.
Sun.,	Dec. 21	Texas El Paso	El Paso	3:30 p.m.
Mon.,	Dec. 29	Portland State	Portland	7:30 p.m.
Wed.,	Dec. 31	* Arizona	Corvallis	1:30 p.m.
Sun.,	Jan. 4	* Ariziona State	Corvallis	
Fri.,	Jan. 9	* Oregon	Eugene	7:30 p.m.
Mon.,	Jan. 12	Portland	Corvallis	7:30 p.m.
Thurs.,	Jan. 15	* USC	Los Angeles	5:30 p.m.
Sat.,	Jan. 17	* UCLA	Los Angeles	5:15 p.m.
Thurs.,	Jan. 22	* Washington	Seattle	
Sat.,	Jan. 24	* Washington State	Pullman	7:30 p.m.
Fri.,	Jan. 30 . . .	* Stanford	Corvallis	
Sun.,	Feb. 1	* California	Corvallis	1:30 p.m.
Thurs.,	Feb.5	* Arizona State	Tempe	5:00 p.m.
Sat.,	Feb. 7	* Arizona	Tucson	TBA
Fri.,	Feb. 13	* Oregon	Corvallis	7:30 p.m.
Fri.,	Feb. 20	* UCLA	Corvallis	7:30 p.m.
Sun.,	Feb. 22	* USC	Corvallis	1:30 p.m.
Thurs.,	Feb. 26	* Washington State	Corvallis	7:30 p.m.
Sat.,	Feb. 28	* Washington	Corvallis	7:30 p.m.
Thurs.,	Mar. 5	* California	Berkeley	7:30 p.m.
Sat.,	Mar. 8	* Stanford	Stanford	7:30 p.m.

All times are subject to change
* Indicates Pacific-10 Conference Game

1986
Men's and Women's Cross Country Schedule

Day	Date	Opponent	Location
Sat.,	Oct. 18	Univ. of Portland	Portland
Sat.,	Nov. 1	Pac 10 Meet	Stanford
Sat.,	Nov. 15	District 8 Championship	Fresno, CA
Mon.,	Nov. 24	NCAA Championship	

1986-87
Women's Volleyball Schedule

Day	Date	Opponent	Location	Time
Wed.,	Oct. 15	Western Oregon State College	Monmouth	7:30 p.m.
Sat.,	Oct. 18	University of Oregon	Eugene	7:30 p.m.
Wed.,	Oct. 22	Portland State University	Corvallis	7:30 p.m.
Fri.,	Oct. 24	Arizona State University	Corvallis	7:30 p.m.
Sat.,	Oct. 25	University of Arizona	Corvallis	7:30 p.m.
Fri.,	Oct. 31	Stanford	Stanford	7:30 p.m.
Sat.,	Nov. 1	University of California	Berkeley	7:30 p.m.
Fri.,	Nov. 7	UCLA	Los Angeles	7:30 p.m.
Sat.,	Nov. 8	USC	Los Angeles	7:30 p.m.
Tues.,	Nov. 11	University of Portland	Corvallis	7:30 p.m.
Fri.,	Nov. 14	Washington State University	Corvallis	7:30 p.m.
Sat.,	Nov. 15	University of Washington	Corvallis	7:30 p.m.
Fri.,	Nov. 21	University of Oregon	Corvallis	7:30 p.m.
S-Sun.,	Nov. 22-23	Safeway Cup	Portland	TBA

Volleyball

Reyes' first recruiting class, the 1986 sophomores, will still be a key for OSU volleyball, but the loss of both Hakala and Madrid will make things tough on the Beavers. Hakala is sitting out a year to work and Madrid will be red shirting. Madrid and Hakala started almost every game last year, and Hakala was named to the NorPac All-Freshmen team as a middle blocker.

The Beavers' junior class should provide a big boost with Merry Walters, Tami Good and twin junior college transfers from Mt. Hood Community College, Kelley and Shelley Rogers. Walters was on the 1984 NorPac All-Freshman squad and is continuing to improve at both middle blocker and outside hitter. Good started some matches for OSU last year and should add depth at middle blocker. She is the Beavers' tallest player at 6-0. The Rogers sisters should also help OSU as outside hitters and Kelley could see some action at setter.

Davis

(Continued from page 5)

assistance is available. Right now, the limit is $900 above the amount of a full scholarship per academic year. Aside from the question of whether athletes should be paid for their services, we live in an age where it takes every dime an institution generates from a sport to help keep that sport going. We simply don't have the money to assist student athletes any more than they are already being helped."

STATER: *"Given the pressures today's college athletes are under to win, plus the amount of time that must be spent in preparation for the coming season or the next game, should athletes not be allowed to take fewer credit hours during those times when their seasons are in full swing?"*

DAVIS: "So where do you draw the line? The NCAA has decided that the floor is going to be 12 credits per semester. Twelve credits at most institutions is considered the minimum full-time load. My own reaction is that if a student goes to class, then 12 credit hours isn't going to be a problem, if that athlete is indeed going to be a student. The athletes who have problems, the ones you read about in the paper, are the ones who don't go to class. If you look at what the regimen is now for most sports, most of the time it does not impinge to the extent it used to.

STATER: *"In the real world of college sports, there are athletes driving new cars and wearing the best clothes, athletes who have plenty of money for anything and everything they need. In the real world of college athletics, there operates an elaborate 'Sugar Daddy' system, a system made up of wealthy athletic boosters who will buy their alma maters the best athletes money can buy. The question is, how far into the 'Sugar Daddy' system does the NCAA have the resources to probe?"*

DAVIS: "The NCAA has very few resources to deal with this problem. If a 'Sugar Daddy' wants to make sure a world class athlete enrolls at his or her alma mater, there's very little the NCAA can do to stop it. They can do it and not get caught. They could do so by using cash, which is not traceable under most circumstances, by going through relatives of the students, leaving no trail whatsoever. Where the relatives are unwilling to talk and offer evidence, there's very little we can do to prove the rules are being broken. There are instances of relatives who actually became the legal guardians of an athlete. About all we can do is amass circumstantial evidence, that is, taking a look at what the real resources of a family really are, what they can afford to do for their son or daughter, and see if that student is receiving something out of the ordinary for his or her family's lifestyle. If we declare such an athlete ineligible and that student takes us to court, the burden of proof is then on the NCAA and the chances are we can't prove a thing. We depend heavily on the basic honesty of an institution and the coaches employed at that institution to keep everything within the rules." **OSU**

George Edmonston

AUGUST RAINMAKER. An unidentified OSU groundskeeper adjusts a sprinkler on the lawn across the road from Benton Hall. Watering grass at OSU is a common summer occurrence, but this summer it was particularly important. According to Kelly Redmond, state climatologist for Oregon State University's Climatic Research Institute, this August was the warmest since 1967 and tied 1958 as the second warmest in 96 years. During the month, there was no rain. And Redmond says the summer June through August ended as the 20th warmest of 94 summers and the 32nd driest of 98 summers, even though July was cooler and wetter than usual.

A Call for Nominations

Nominations for the 1987 E.B. Lemon Distinguished Alumni Award are now being accepted by the OSU Alumni Association.

The award recognizes and honors former OSU students who have significantly contributed to society and whose accomplishments and careers have brought credit to the University.

Previous Lemon Award recipients are: 1981 — Thurman J. (T.J.) Starker and Loren L. (Stub) Stewart; 1982 — Claude F. Palmer; 1983 — N.B. (Nat) Giustina; 1984 — Milton Harris; 1985 — Robert C. Ingalls; 1986 — Linus C. Pauling.

Nominations for OSU's most prestigious alumni award should be submitted to Don Wirth, alumni director, 104 Memorial Union, OSU Alumni Association, Corvallis, OR 97331.